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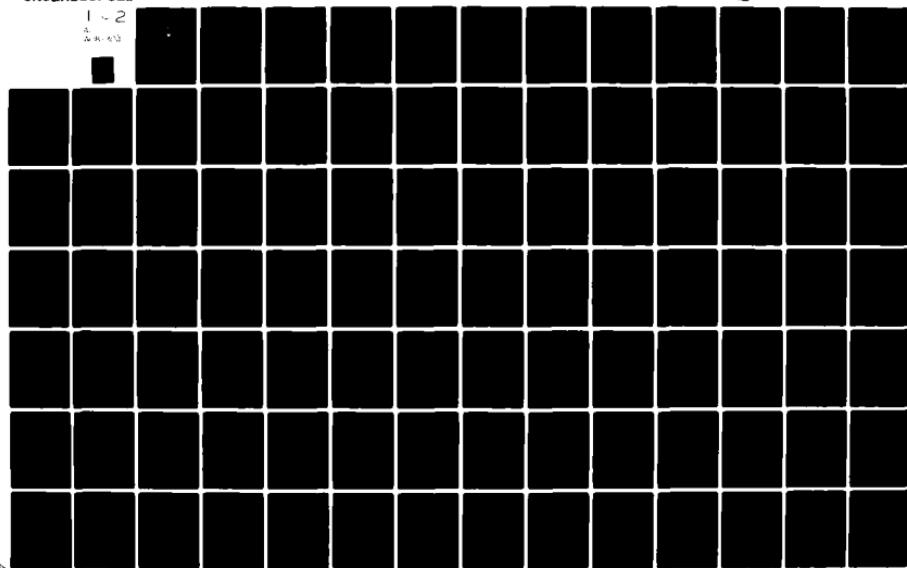
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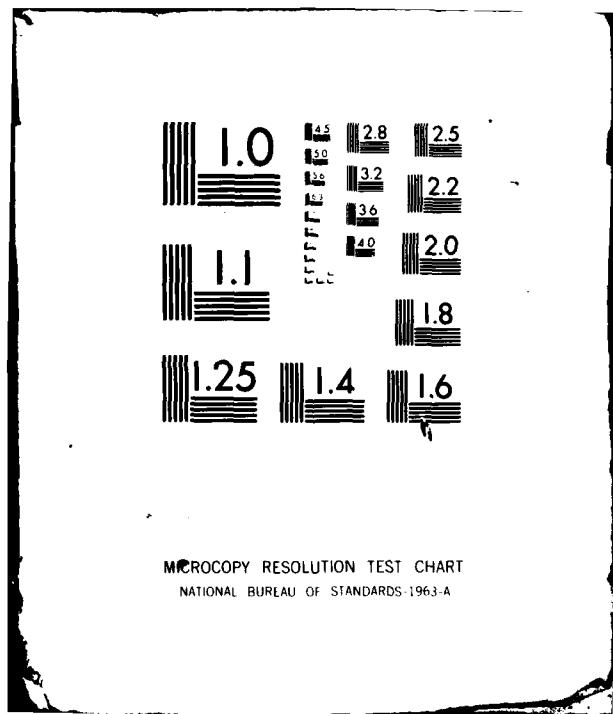
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THESIS

THE DEVELOPMENT OF THE INFORMATIONAL
DATA BASE REQUIREMENTS FOR A RESERVE
TRAINING MANAGEMENT DECISION SUPPORT SYSTEM

by

Robert Wilson McElmoyle

March 1980

Thesis Advisor:

Phillip Ein-Dor

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The Development of
The Informational Data Base Requirements For A
Reserve Training Management Decision Support System

by

Robert Wilson McElmoyle
Lieutenant, United States Coast Guard Reserve
B.A., Bloomsburg State College, 1971

Submitted in partial fulfillment of the
requirements for the degree of

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March 1980

Author

Robert Wilson McElmoyle

Approved by

Philip E. Drury

Thesis Advisor

John N. L.

Second Reader

Carl D. Brown

Chairman, Department Administrative Science

J. A. Schrader

Dean of Information and Policy Sciences

ABSTRACT

Since the inception in 1972 of Reserve augmentation as the primary mode of Reserve Training, the information needs of personnel responsible for the management and administration of the Reserve Training Program has steadily increased. The purpose of this thesis is to examine the information needs of these personnel and to evaluate the capability of the present Reserve Management Information Systems to meet these needs. It was found through this examination that the present reserve systems do contain useful and necessary information, however, in general, there is a need for more detailed and specific training related data that is not now available. To be useful as a Management Decision Support System [1] for Reserve Training, additional data in the areas of correspondence course participation, Active Duty for Training performance, and advancement history and servicewide examine participation must be incorporated into the system.

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I. INTRODUCTION

Since the inception of the Reserve Augmentation Program as the primary mode of Reserve Training and the expansion of the missions and responsibilities of the Coast Guard and Coast Guard Reserve, the information needs of management and administrative personnel at all levels of the program has steadily and dynamically increased. With this increase, a need for an accurate and timely source of information became apparent. The Reserve Personnel Management Information System (RPMIS) was developed in an attempt to fill this information need. The system development was to be undertaken in two phases. Phase I concerning initial system hardware and software development and data base development for monitoring the Reserve Administrative Program. The development of this phase has been completed and is now operational. Phase II has not been developed.

* Phase II was to expand the data base of the RPMIS system to include the data necessary to monitor and control the Reserve Training Program. It is the purpose of this thesis to analyze the Reserve Training Program and develop the data base information requirements necessary to monitor all functions of the Reserve Training Program.

II. COAST GUARD RESERVE PROGRAM BACKGROUND

A. COAST GUARD ORGANIZATION

The Coast Guard is organized with its Headquarters in Washington, D. C. under the direction of the Commandant of the Coast Guard. There are two Coast Guard Area Commanders who have dual responsibilities, the Atlantic Area Commander and the Pacific Area Commander. The Area Commanders are in charge of the districts within their respective areas and deal only with specific operational inspections and training matters and operational situations that involve more than one district. The twelve Coast Guard Districts throughout the Coast Guard generally report directly to the Commandant of the Coast Guard. The district boundaries are shown in Figure 1.

Coast Guard Headquarters and each District is divided into divisions, with each division responsible for a specific Coast Guard mission or general program area. The Reserve Division at both Coast Guard Headquarters and the District is responsible for the administration of the Coast Guard Reserve Programs. Each district is responsible for the training of reservists and the administration of the Reserve Program within its boundaries. Exceptions to this policy are the Fourteenth and Seventeenth Districts. Because of the small numbers of reservists within each of these Districts, the Seventeenth District Reserve Program has been placed under the administrative jurisdiction of the Thirteenth District and the Fourteenth

COAST GUARD DISTRICT BOUNDARIES



FIGURE 1

District Reserve Program is controlled by the Fourteenth District Operations Division [2]. Figure 2 shows an organizational chart for the primary Coast Guard Divisions at the Headquarters and District level that are responsible for the administration of the Reserve Programs.

As shown in Figure 2, each District is further subdivided into Reserve Groups and Reserve Units which coincide as closely as possible to the regular Coast Guard structure. The functions indicated in Figure 2 of Reserve Training, Programs, and Administration which are shown at both the District and Headquarters levels are also at either the Reserve Group or Unit level. The specific location of these responsibilities depends on whether the Units within the Group are responsible for their own administration. This division of administrative responsibility varies between Districts and may also vary between Reserve Groups within the same District [3]. The number of Reserve Groups and Units varies in each District with organizational and operational requirements.

This administrative organization would not, however, affect the administration chain-of-command which would be:

1. Reserve Division Headquarters
2. Reserve Division District
3. Commander Reserve Group
4. Commanding Officer Reserve Unit

COAST GUARD RESERVE ORGANIZATION

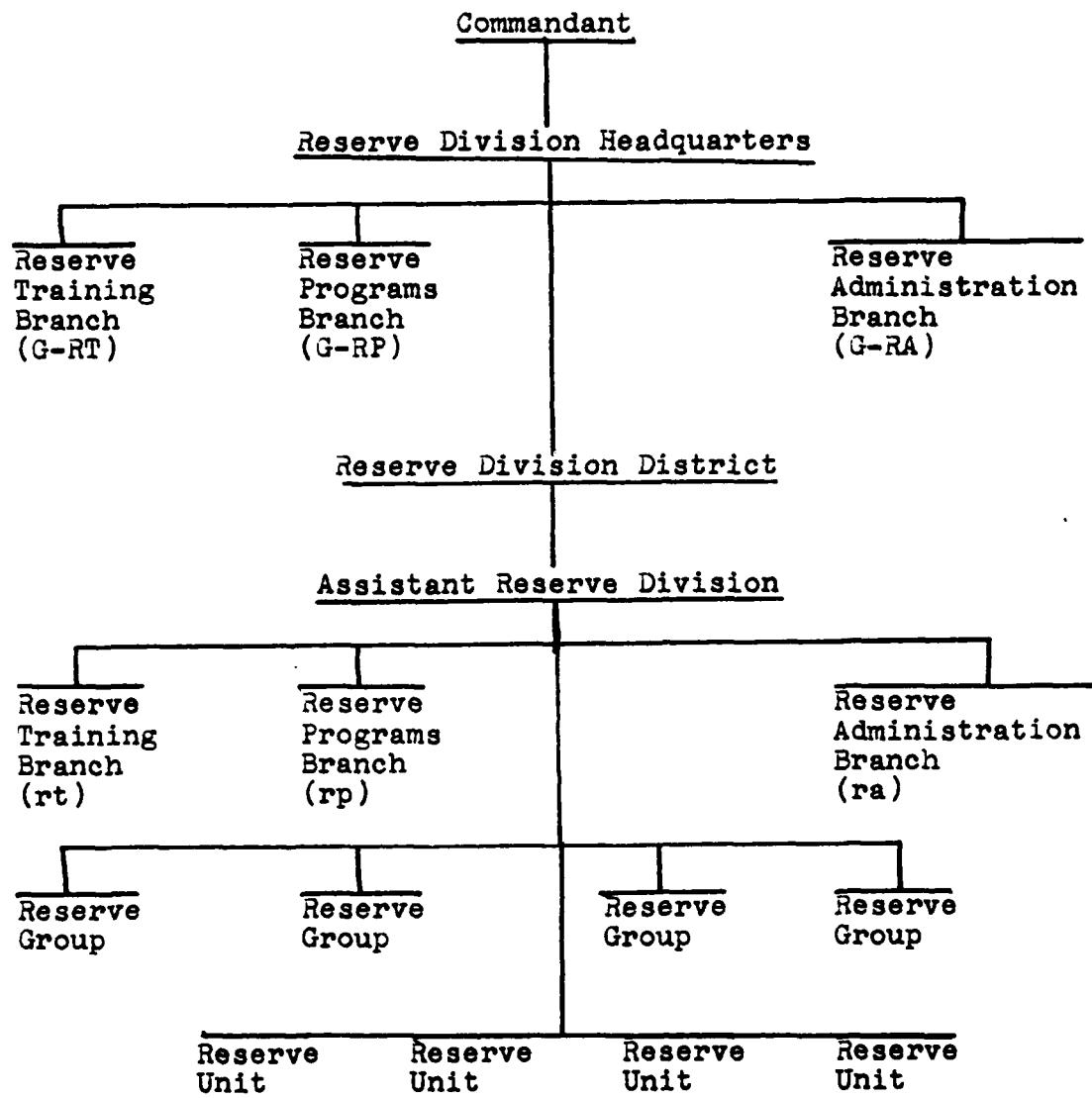


FIGURE 2

B. RESERVE DIVISION RESPONSIBILITIES

Each Reserve Division is responsible for the administration of the Reserve Program within its District. As shown in Figure 2 these responsibilities have been divided into three areas:

1. Reserve Training
2. Reserve Programs
3. Reserve Administration

1. Reserve Training

The Reserve Training Branch of the Reserve Division and the equivalent Training Officer at the Group or Unit level is responsible for the following areas:

- a. Administration of the correspondence course program, including enrollment and maintenance of required records and reports.
- b. Formulation and administration of the unit/district training program to the end that training received prepares the reservists for their mobilization assignments. Monitor individual progress and maintain necessary records.
- c. Coordinate and monitor both the Inactive Duty for Training (IDT) and the Active Duty for Training (ADT) programs.
- d. Coordinate, administer and monitor the servicewide examination program.
- e. Coordinate and monitor the unit/district formal training program.

- f. Monitor Active Duty for Training (ADT) pay.
- g. Coordinate and control the IDT and ADT augmentation programs [2,4] .

2. Reserve Programs

At some Units, Groups or Districts the Reserve Programs area of responsibility may be merged with Reserve Training.

The Program Branch is responsible for the following areas:

- a. Formulation of the budget at the District and Headquarters level.
- b. Maintenance of the Reserve Mobilization System.
- c. Ordering and control of supplies, clothing and other items needed by, and authorized for, the Reserve Units [2].

3. Reserve Administration

The Reserve Administration Branch is responsible for:

- a. At the District level maintenance of the present Reserve Personnel Management Information System (RPMIS).
- b. Maintenance of all service and health records and related items.
- c. Administration and monitoring of all Inactive Duty for Training (IDT) pay.
- d. Maintain files in accordance with current directives [2].

The duties of these branches are very much interrelated and interdependent for information and records necessary to

perform effectively and efficiently. These responsibilities may also vary at some levels of Command or with individual District organizational structure.

C. THE COAST GUARD RESERVE PROGRAM

1. History

The United States Coast Guard Reserve was initially established by Public Law 76-152 (53 Stat. 754) on 23 June 1939. On 19 February 1941, Public Law 77-8 (55 Stat. 9) changed the name of the then existing Coast Guard Reserve to the Auxiliary and the Coast Guard Reserve was established. This program was modelled after the already existing United States Naval Reserve. Other important legislation that has affected the Coast Guard Reserve Program is:

- a. Universal Military Training and Service Act (UMT and S).
- b. Armed Forces Reserve Act of 1952 (AFRA).
- c. Reserve Officer Personnel Act of 1954 (ROPA).
- d. The Reserve Forces Act of 1955.
- e. Military Selective Service Act of 1967.
- f. Emergency Augmentation 14 USC 764 [2].

2. Mission

The Coast Guard Reserve is the reserve component of the United States Coast Guard. The mission of the reserve components of the Armed Forces was originally established by the Armed Forces Reserve Act (AFRA) of 1952, and restated for

the Coast Guard Reserve in Title 10, United States Code. It states that the purpose of the Coast Guard Reserve is:

"...To provide trained units and qualified persons available for active duty in the Coast Guard, in time of war or national emergency and at such other times the national security requires, to fill the needs of the Coast Guard whenever, during, and after the period needed to procure and train additional units and qualified persons to achieve the planned mobilization, more units and persons are needed than are in the regular components." [4]

In order to achieve and maintain the state of readiness required to perform this mission effectively the Coast Guard Reserve shifted its primary mode of reserve training during the period 1971-1972, from formal classroom instruction to direct augmentation of regular Coast Guard Units during both Inactive Duty for Training (IDT) and Active Duty for Training (ADT). Reservists would perform identical functions and tasks and frequently would replace members of the regular service during periods of IDT and ADT duty and during periods of domestic emergencies. The current Coast Guard directives concerning the performance of reservists requires each reservist to spend 65% of their available IDT and ADT duty time performing augmentation [4].

3. Coast Guard Augmentation Training Program

The shift from traditional formal classroom instruction to augmentation as the primary mode of reserve training has produced favorable results [4]. Augmentation has been officially defined as, "any reserve activity that supports effective training for mobilization while meeting a stated need of an element

of the regular Coast Guard." [2] This very broad definition of augmentation permits the use of reservists in all types of duty that an active duty Coast Guardsman might be expected to encounter. Augmentation is accomplished by detailing reservists to regular operating units to assist them in the performance of their assigned responsibilities and mission(s). Several major benefits accrue from the Reserve Augmentation Program:

- a. The reserve benefits by improved practical experience in Coast Guard mission areas while involving the reservist more completely in the daily operations of the regular Coast Guard, enhancing their sense of accomplishing training which is similar to, and valuable for, mobilization readiness.
- b. The operating force benefits by having additional trained manpower available on a scheduled basis, particularly during periods of peak operations [4].

Reservists perform augmentation in the following mission areas:

- a. Port Safety and Security (PSS).
- b. Search and Rescue (SAR).
- c. Enforcement of Laws and Treaties (ELT).
- d. Marine Environmental Protection (MEP).
- e. Commercial Vessel Safety (CVS).
- f. Aids to Navigation (AN).
- g. Military Preparedness (MP).

h. Recreational Boating Safety (RPS).

i. Recruiting.

j. Support Augmentation.

Although this shift in the primary mode of reserve training has greatly improved the readiness capabilities of reservists, it has also increased the complexity of the administration and training requirements and procedures necessary to control and manage the Reserve Program.

Control is further complicated at all levels, as Reserve Units no longer meet as complete entities one weekend each month. Augmentation is scheduled and performed by individual reservists as needed to meet the regular units' operational needs. Augmentation both on IDT and ADT is performed by individual reservists, not units as it had been prior to the establishment of the augmentation program.

The Coast Guard is responsible to ensure that reservists are fully qualified to perform their assigned mobilization missions. Specific training and mobilization requirements have been established to ensure that the reservist assigned to specific mobilization billets obtain the required skills and training. Modern military strategy depends on the ability of each reserve component to mobilize and deploy qualified personnel in a short time period to assure a swift and orderly transition from peacetime to wartime or state of emergency [2]. The ability to complete this transition will depend on the efficiency and effectiveness of the training received by each

reservist and the closeness of this training to assigned mobilization requirements. Development and control of training programs will greatly assist the successful completion of this primary objective.

III. SYSTEM DESIGN AND ANALYSIS

A. DEFINITION OF A MANAGEMENT INFORMATION SYSTEM

At this time in the literature there is not universal agreement among managers and computer scientists on a firm consensus definition for a Management Information System (MIS). Some of the definitions that have been developed are:

"An MIS System, fundamentally, is a financial control system which is the principal basis of a good planning system [5]."

"A MIS is a system of people, equipment, procedures, documents, and communications that collects, validates, operates on, transforms, stores, retrieves, and presents data for use in planning, budgeting, accounting, controlling, and other management processes for various management purposes [6]."

"A management information system may be defined as an organized method of providing management with information needed for decisions, when it is needed and in a form which aids understanding and stimulates action [7]."

"A MIS is an integrated, man/machine system for providing information to support the operations, management, and decision making functions in an organization. The system utilizes computer hardware and software, manual procedures, management and decision models, and a data-base [8]."

From these definitions it can be said that each manager has a different concept of a MIS. There is no specific system

envisioned when the general term MIS is mentioned. Each person has their own definition. The following are brief descriptions of four basic types of MIS systems:

1. Formal/Automated

This type of information system is always the most sophisticated, where the machine is more the worker and the man more the designer, director, observer, or user. Electronic computers with all of the associated hardware to complement and connect them are involved in a full blown automatic data processing system.

2. Formal/Non-Automated

This system includes all those conventions, procedures, media, that are formally prescribed, legally required, or by habit adhered to; but which are implemented either manually or with minor equipment. The predominant effort is clerical.

3. Informal/Formal

This system could well be a more powerful information system in the key management sphere than any other output of any part of the entire MIS. This is the product of organized advisory staff work; the formal staff meeting where problems are discussed; and the work of formally chartered groups such as a board of directors.

4. Informal/Informal

A system of this sort can be information passed at a cocktail party, a network of personal letters, the grapevine

or any other system of information exchange. This is included because to some extent it does carry information and influences management decisions [7].

B. DATA MANIPULATION FUNCTION IN A MIS

Data are the heart of a MIS, the establishment of data needs are essential in the development of any sophisticated information system. Data have value to the extent that they can be retrieved, processed, and presented to the manager needing it within the time allowed for the decision or action to which it applies. Data that cannot be located, processed or retrieved on time, have no value in the decision process.

A MIS envisions the availability of a fairly comprehensive set of stored data in order to provide information to support operations, management, and decision making in an organization. The system must be able to selectively retrieve various combinations of stored data on demand of the manager. The manager's requirements for information are rarely fixed and vary with the dynamic nature of the organization.

C. DATA BASE APPROACH

A data base may be defined as:

"...a collection of interrelated data, stored together without harmful or unnecessary redundancy to serve one or more applications in an optimal fashion; the data are stored so that they are independent of programs which use the data; a common and controlled approach is used in adding new data and in modifying and retrieving existing data within the database. One system is said to contain a collection of data bases if they are entirely separate in structure."

[9]

During recent years data base systems and so called integrated data bases have received greater attention from both managers and computer personnel. The terms data base, data bank, intergrated data base are used synonymously by most managers to indicate the internal repository, in a logical sense, of all automated data available to an organization.

The general objectives of a data base approach is the elimination or minimization of data fragmentation, data redundancy, and inconsistent data manipulation which is typical of many file processing environments [10,11].

The use of a data base system in a MIS will allow for a centralized control of the data within the organization, data redundancy reduction, minimization of inconsistencies in the stored data, utilization of data for one or more applications, and a better logical data organization. The data base plan must be a subset of the overall data processing plan. Development of the data base system is based on a statement of goals to be achieved within the data base system. These goals must be based on the organizational requirements of the individual managers that are involved in the MIS design and development. These objectives must come from the users of the system.

The commitment to a data base approach is a major decision of an organization. Essential to the success of the development and implementation of the data base system is the support of the user in the design and analysis of the system needs [9,10].

D. INFORMATION ANALYSIS APPROACH

1. General

An MIS envisions the availability of a fairly comprehensive set of stored data in order to provide information to support operations, management, and decision making in an organization. This concept is what King [1] calls the development of a Management Decision Support System (MDSS). King defines a MDSS as:

"The term ... is used to describe a wide variety of systems which have the direct objective of supporting management decision making. Thus, a management information system (MIS) is an MDSS if it is designed with the primary objective of managerial decision support.... The criteria used here to distinguish a system as a MDSS are the system's primary objective and the basis for its design and development. Only those systems which have the direct and primary objective of supporting managerial decision making, and which are designed and developed to accomplish that objective are to be considered Management Decision Support Systems." [1]

The system must then be able to selectively retrieve various combinations of stored data on demand in support of the decision in question. This approach addresses itself to the development of a MIS which focuses on the analysis of the information requirements necessary to support the management decision-making process. This type of system has been referred to as, "Management Decision Support System" [1,12,13,14,15].

The informational analysis approach to system design involves a formalized step by step process [1, 12]. These steps are as follows:

- a. Identification of User Set and Interfacing Organizations
- b. Identification of Decision Areas
- c. Definition of Decision Areas
- d. Model Development
- e. Determination of Requirements

2. Identification of User Set and Interfacing Organizations

The user sets involved in the design of a MIS is the set of all those managers who have been designated to be the primary users of the MIS system that is under development. This set of users must be clearly and specifically defined prior to the development of the system [12].

3. Identification of Decision Areas

A decision inventory related to the planning function of the users of the system must be developed. This set involves the identification of all the decisions that the user managers must make using the information provided by the system.

4. Definition of Decision Areas

This step involves the process of expanding each of the decision areas into its subdecision sets so that each decision that must be made can be considered independently. The decision areas are divided into decision elements on the basis of:

- a. Homogeniety
- b. Need for a common information input

- c. Need for a common information output
- d. User responsible for the decision element [12].

5. Model Development

This step involves the use of the information provided in the earlier analysis of the system requirements to develop a model of the organizational system which is relevant to the MIS. The purpose of the model development is to develop a model of the management decision process. This model then provides the basic framework for the system development process.

6. Determination of Requirements

This is the final step in the development process. The information requirements are developed to perform the tasks identified in the analysis process [12].

E. VALUE OF INFORMATION

The value of information is based on its attributes, and because of the conceptual nature of information, some of those attributes are difficult to measure. The list of these attributes, as given by Bench and Strater [16] follows:

1. Accessibility

This refers to the ease and speed with which an information output can be obtained.

2. Comprehensiveness

This refers to the completeness of the information content. This attribute is quite intangible and, consequently, it is difficult to quantify.

3. Accuracy

This attribute pertains to the degree of freedom from error of the information output.

4. Appropriateness

This attribute refers to how well the information output relates to the user's request.

5. Timeliness

The user must receive the information, within the time allowed, for the decision or action to which it is applied.

6. Clarity

This attribute refers to the degree an information output is free from ambiguous terms.

7. Flexibility

This attribute pertains to the adaptability of an information output not only to more than one decision, but to more than one decision maker.

8. Verifiability

This attribute refers to the ability of several users examining an information output to arrive at the same conclusion.

9. Freedom from Bias

This attribute pertains to the absence of intent to alter or modify information in order to produce a preconceived conclusion.

10. Quantifiable

This attribute refers to the nature of information produced from a formal information system.

F. SYSTEM LIFE CYCLE

1. Definition of a System

A system can be defined as a network of interrelated procedures that are joined together to perform some activity, function or operation [17]. And a procedure is defined as a series of step-by-step instructions that explain:

- a. What is to be done
- b. Who will do it
- c. When will it be done
- d. How will it be done.

2. System Analysis

System Analysis is the process of studying the network of interactions within an organization and assisting in the development of new and improved methods for performing necessary management tasks and making management and administrative decisions [16].

The system development plan is a guideline for the development of computerized systems. It defines a comprehensive process beginning with the definition of a problem and including the design and implementation of a new or expanded system, which will correct the problem by providing management with the necessary information to make a required decision.

The system life cycle consists of the following activities:

a. Conception

System conception is the identification of a need which, it is suspected, can be satisfied by the development of

a new system. At this stage the need for a new information system is first recognized. It may be determined at this point that modification of an existing system may be appropriate or that no system is necessary or appropriate.

b. Preliminary Analysis

The Preliminary Analysis is the investigation into the feasibility, desirability, and practicability of using automated data processing techniques to solve information needs.

c. Preliminary Design

The Preliminary Design is the stage in which the project team evaluates alternate design approaches, selects a preferred design approach, writes preliminary design specifications and writes the test specification. The basic system is established at this stage.

d. Detailed Design

The Detailed Design is the stage where the basic system designed is expanded and refined to produce detailed specifications for all program modules, manual procedures, and information files.

e. Configuring and Selecting the Computer Equipment

The previous stages were the basis for setting up exactly which applications are to run on the system.

At this stage, the configuration of the computer system (hardware/software) is established and the selection and evaluation of vendors are accomplished.

f. System Programming

The logic for the computer's programs is developed at this stage, following the system specifications accepted by the user. Once the logic has been set up the programmers begin coding and testing each program in the system.

g. System Documentation

System Documentation is the collection and presentation of information concerning the system. Information is recorded starting from the conception of the system and ending with the cessation of it.

h. System Testing

System Testing is the process of trying to verify whether the system performs its intended function.

i. System Implementation

System Implementation consists of the tasks involved in implementing the system in the operating environment.

j. System Operation

System Operation is the production phase. Responsibility for the system is now shifted to the operations group. However, the designer and programmer can contribute to making the transition easy.

k. System Maintenance and Follow-up

Once the system has been made operational, it is important to have a continuing support service to maintain the hardware and software.

1. System Cessation

System Cessation is the end of the System Life Cycle. The system approach assumes that all systems have a finite life and, therefore, will eventually expire.

This thesis will be dealing with the first four steps in the system life cycle.

IV. RESERVE MANAGEMENT INFORMATION SYSTEMS

A. RESERVE PERSONNEL MANAGEMENT INFORMATION SYSTEM (RPMIS)

1. General

With the advent of the Coast Guard augmentation program and the shift from formal classroom instruction to reserve augmentation as the primary mode of reserve training, there was a corresponding increase in the complexity of the entire Reserve Program. This shift brought forth individually tailored training programs which replaced the traditional unit program. Reservists are now performing their Inactive Duty for Training (IDT) and Active Duty for Training (ADT) as individuals, and are performing this duty at regular active Coast Guard Commands. Scheduling of appropriate augmentation duty to ensure reservists receive necessary training to qualify them for their mobilization billet assignments now is harder and more time consuming.

By late 1974, it was determined that the output generated by the existing Reserve Management Information System, "Diary System," was inaccurate and unreliable because of processing

methodology, lead time necessary to update the master data files and produce output reports, and the expanding and changing training and administration needs at all levels of command. Because of these inadequacies a reserve sponsored study was initiated to determine the feasibility of developing a Reserve Personnel Management Information System (RPMIS) to process information that would meet the management objectives.

2. RPMIS Feasibility Study

a. Objectives

The overall objective of the feasibility study was to develop a higher quality personnel data base at a smaller cost in terms of equipment and personnel resources that would be necessary to maintain the system. Reference 18 contains the specific objectives of the study. These include:

- (1) Providing more accurate information by expanding the master file data base, thereby improving service to system users.
- (2) Reduction in clerical, equipment, space, overhead and processing time expenses.
- (3) Identifying the users and sources of the input data.
- (4) Comparing the regular Coast Guard Personnel Management Information System (PMIS) with Reserve needs for compatibility.

b. Analysis of Alternatives

The study group identified three possible alternative systems that would be investigated. These alternatives were; a totally manual system, the current or partially computerized system, and a totally computerized system.

(1) A Totally Manual System. This system takes the form of recording all needed information on paper and distributing copies of appropriate documents to applicable offices and commands. A return to a manual system would only increase peripheral operations and produce more errors. Another factor that discourages the adoption of this alternative is that a sizeable number of reserve personnel would be necessary to maintain the system and thus would not be available for mobilization training and related augmentation. Such a manual system would make it virtually impossible to compile statistics on the Reserve without extensive manual research. It would further require duplicated file systems to be maintained to provide information for the variety of management decisions that must be made. This system which ignores the capabilities of the computer resources that were available was rejected as a nonfeasible alternative.

(2) The Current or Partially Computerized System. This system presents the problem of duplication of data in the various files. In order to get information to support management decisions, several files must be accessed. Some files would be manually maintained while others would be computerized.

The user would first have to identify which files should be accessed. Retrieval from the computerized files on one hand would be reasonably rapid, while retrieval from the manual files would be very slow and time consuming. These disadvantages are burdensome and thus this alternative was rejected.

(3) A Completely Computerized System. A totally computerized system would integrate important functional program areas into one central data base and would develop quality reporting characteristics within those areas. These reporting characteristics would contribute significantly to the eradication of the problems of timeliness and availability of data, which had plagued the current system and would be increased by either of the two other alternative systems. The fully computerized system was thus considered the best alternative [18].

c. Advantages of a Totally Computerized System (RFMIS)

The following is a list of advantages developed by the study group that are inherent in a computerized system:

1. It will free reserve management from the manual chore of retrieving data on Reservists from multiple files and sources. More time can then be spent on developing the reserve program as opposed to just running it.

2. The elimination of hand calculations and merging of related reports to make the monthly Report of Reserve Personnel Statistics could be achieved.

3. Participation in the Armed Forces Reserve Components Personnel Data Program by the Coast Guard Reserve would become a fact.

4. Elimination of the need to maintain district level, card files and key punch operations/transactions to generate a weekly diary that is seldom used.

5. Elimination of much of the need for personnel to create new reports to answer ad hoc questions. The vast majority of one-time reports can be produced easily through the Multiple Axis Retrieval System (MARS).

6. Standardization of all reserve personnel information and data processing under one information system (RPMIS). This would permit other, yet unidentified, reserve-related data processing applications.

7. Facilitation of report interpretation by means of printouts in English as opposed to codes.

8. Clarification of defined meanings of all terminology in one reference manual similar to the PMIS Manual (CG-207-3).

9. Flexible system design will allow subsequent changes to programs and files without costly reprogramming. Under MARS the file (storage) can be expanded or contracted as needs dictate.

10. Well defined responsibility for the maintenance of programs and data in files.

11. Complete and necessary information maintained on all personnel in all categories of the reserve force.

12. Creation of one file for all reserve personnel data. RPMIS will eliminate duplication of data elements in multiple files; eliminate the need to merge multiple files for cross reference reports; eliminate conflicting reports generated from separate files maintained under separate processes by difference commands; clarify in the mind of the user that RPMIS is the one authoritative source of personnel data.

13. Preparation of reserve pay operation for transition to JUMPS at the same time the regular service makes transition to JUMPS.

14. Provision of compact, double backup copies of files for recovery in event of system failure and/or for historical analysis. This could be achieved under a scheme which avoids costly indefinite retention of end-of-month files on magnetic tape.

15. Maintenance of all data on personnel lost from the service for historical analysis to rectify mistakes in program that tend to cause higher attrition rates than desirable.

16. Easy to capture source data. Unique reporting.

17. Only one general transaction to submit all source data (one form).

18. Immediate correction of errors either by record display or immediate return of document to responsible authority for correction.

19. Thorough editing of all data in an individual record anytime a change is submitted. This insures records will be kept clean of errors.

20. Contact each Reservist once each year for multiple purposes: Retirement point statement, existing data verification and direct updating of information - a system that could significantly add to the effectiveness of the annual screening questionnaire currently in use is of little value in the management of reserve forces.

21. Fast, easy retrieval of all data necessary to manage the reserve force. This data can be made available in any desired form: Listings, counts, percentages, etc.

22. Districts could have same capabilities to retrieve data as Headquarters if this is desirable.

23. Automatic production of G-R required monthly reports, i.e., augmentation and monthly activities.

24. Use of a simple check list to request other pre-programmed reports.

25. Mobilization billet matching with geographic location, rate and rating requirements and/or civilian expertise or education." [17]

It must be noted at this time, that not all the advantages cited above are presently completely realized by the RPMIS system. Additional data associated with the Reserve Training and Mobilization functions must be added to the data base to have a completely intergrated totally functional Reserve system that can be used by all facets of the program.

d. RPMIS/PMIS File Intergration

The question of duplication of effort in the separate development of the RPMIS file was a primary consideration.

This presumes that the two systems, PMIS and RPMIS would perform identical functions. This premise is not entirely correct. On the surface it appears that two separate files for two pay and personnel systems for two sets of military personnel from the same service would be identical. They are not. There are major differences:

(1) The active duty force has no need for a mobilization matching system.

(2) The active duty force is paid on a continuing basis, reservists are paid for duty performed and not necessarily on a regular basis.

(3) The active duty force has no need to account for retirement points. The reserve force is mandated to do so.

(4) Other information that should be collected and maintained on reserve forces but not active duty personnel include; home address, officer experience indicator (past and present), civilian occupation, education (past and continuing), previous reserve duty assignments and performance history.

(5) Many of the envisioned functions of RPMIS such as flagging of obligated personnel to be called to ADT for unsatisfactory participation is not a function of PMIS. Any attempt to incorporate such differences into the PMIS file would create enough disparity between the active duty and reserve file, in both the data collection and dissemination phases that, in fact, two separate files would exist. The functional requirements of the proposed RPMIS system are

sufficiently different from PMIS as to require a separate and distinct file. The two files must, however, be as compatible as possible in systems design and software/hardware utilization [18].

e. Recommendations of Study Group

In the development of their recommendations the study group reviewed the Department of Defense, Reserve Components Common Personnel Data System, the United States Marine Corp Reserve System and recommendations and requirements from various Headquarters and District Divisions and Coast Guard Units. The study group made the following major recommendations upon the completion of their review:

- (1) The Reserve Personnel Management System (RPMIS) should be parallel to, but not exactly identical to the regular force PMIS.
- (2) The system should have centralized processing and storage of data. Selected Reserve data should be stored on line with all other categories held in offline storage. Data flow should be source directed to centralized processing and storage.
- (3) Sources of input data would be field recruiting offices for initial entry, District Reserve Divisions and the Coast Guard Institute.
- (4) Expansion of the existing data base to include more data elements, in a variable length record [18].

Upon completion of the feasibility study and the review of the study group recommendations it was determined

that an RPMIS System would be developed. The proposed system would be patterned after the existing PMIS system with identical reporting procedure. The two systems would be compatable, but not identical. They would be at times parallel, other times overlapping and also unlike in various data elements required to meet the stated needs [18].

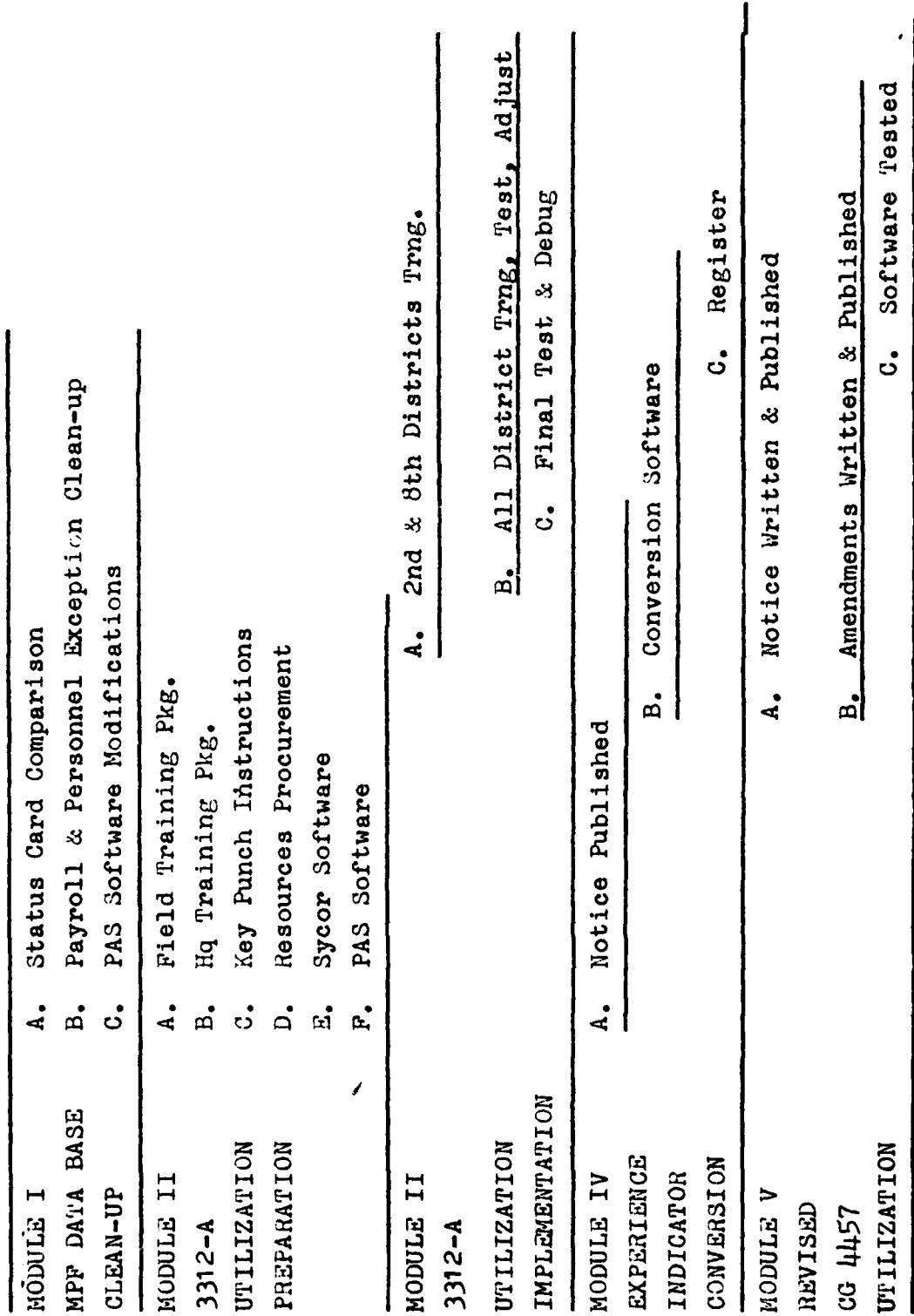
3. RPMIS SYSTEM DEVELOPMENT

a. General

Upon completion of the feasibility study the recommendation to develop a computerized Reserve Personnel Management Information System (RPMIS) was accepted. It was determined that the total system would be developed in two phases, phase I and II. The phase I development process is shown in Figure 3. Phase I includes:

- (1) Development of the initial system hardware and software.
- (2) The expansion and updating of the present Master Personnel File (MPF).
- (3) The development of instructions and training in the use of the data input document. Personnel Action Sheet (Form CG-3312A), Figure 4.
- (4) Pilot test in the Second (St. Louis, Missouri) and Eight (New Orleans, Louisians) Coast Guard Districts.

RPMIS PHASE I
TASK FLOW CHART



(5) Conversion of the present Officer Designators to Officer Experience Indicator Codes presently being used for Regular Officers.

(6) The revision of the Unit Attendance Record Form CGHQ-4457 for Reserve IDT pay, Figure 5.

Phase I was concerned with the development of a data base to include those data elements necessary for the performance of administration functions necessary for the management of the Reserve Program.

b. Data Transmittal

There are two basic source documents for the transmittal of necessary data to update the RPMIS System. These two documents are the Personnel Action Sheet (Form CG-3312A) and the Unit Attendance Record (Form CGHQ-4457). A copy of each of these forms is included as Figure 4 and 5 respectively.

DEPARTMENT OF TRANSPORTATION U. S. COAST GUARD CG-311PA Rev. 1-75		PERSONNEL ACTION					
FORM ID (29-26)	1. SOCIAL SECURITY NO. (27-35)	2. LAST NAME (First five letters) (36-40)	3. EFFECTIVE DATE (41-47)	4. EFFECTIVE TIME (48-51)	5. ACTION CODE (52-59)	6. TYPE ENTRY (56)	
7A			YR. MO. DAY				
7. ACTION DESCRIPTION							
8. ENTRY (57-66)	9. ELEMENT CODE (59-60)	10. ELEMENT (61-79)	ELEMENT DESCRIPTION				
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
12. REMARKS							
13. CERTIFIED TO BE CORRECT - Above actions were effective on dates shown. Authorization is given to change personnel records on the basis of this report and to open, adjust or close pay records, as required. I certify that any member who performed flying duty did so under orders of competent authority and was in a duty status and fulfilled flight requirements during the period indicated.			14. SIGNATURE OF RESPONSIBLE OFFICER (TYPED NAME, GRADE & TITLE)			15. DATE	
16. NAME OF PERMANENT UNIT			17. NAME OF UNIT PREPARING THIS FORM				
18. NAME OF MEMBER (Last, First, MI)			19. GRADE/RATE			20. PAGE 12	

FIGURE 4
[19]

44A

FIGURE 5

The Personnel Action Sheet (Form CG-3312A) is a five-part color coded form that is completed by the District Reserve Division based on instructions contained in Reserve Personnel Information Manual [19].

The data submitted on the Personnel Action Sheet is based on the type of transaction that is being recorded by the form (see Appendix B). The Personnel Action Sheet is utilized for all data that is submitted by the District Reserve Division. Appendix B contains a list of transaction codes for the RPMIS System. These codes can be expanded easily to accommodate the necessary training related transactions.

The unit Attendance Record (Form CGHQ-4457), Figure 5, is preprinted with the Reserve Unit roster and is forwarded monthly to each unit. This form is used as the basic document for the recording of Inactive Duty for Training (IDT) performed by each reservist during the month. At the end of each month it is forwarded to Coast Guard Headquarters, where the data is used to record each reservist's earned retirement points and as the authorizing document for Inactive Duty pay for each reservist.

c. Data Input Files

In phase I data files were developed that replaced the existing Master Personnel File (MPF). These files were designed to expand the Reserve data base and provide information necessary to cover the expanding reserve administrative information needs. Five separate data files were developed. These files were:

- (1) Name and Address File (166 characters)
- (2) Reserve Personnel Master Record Officer (252 characters)
- (3) Reserve Personnel Master Record Enlisted (252 characters)
- (4) Correspondence Course Record (80 characters)
- (5) Master Pay and Points Record (956 characters).

These files are maintained separately in Social Security Number sequence with some duplication of data fields other than the Social Security Number key field on each file. This need for duplication has been created because the five separate files have been developed to operate as independent systems (files) within the RPMIS System. The key to update data on the files is the transaction code on the Personnel Action Sheet which is used for data transmittal. The complete record outlay for the 5 RPMIS files is shown in Appendix C.

d. Data Output Reports

Each Coast Guard District has an intelligent terminal that can be linked via telephone land line to the Coast Guard Headquarters computer. This terminal is capable of input, output and some minor computational operations. There have also been several specific output programs developed for data retrieval through the district terminal. These programs are available at each District Office and can be used to retrieve data at their discretion. These programs are:

- (1) Reserve Qualification Data - By SSN
- (2) Reserve Qualification Data - By Unit
- (3) Reserve Status Data - Alphabetical
- (4) Reserve Status Data - Unit Listing
- (5) Manpower List - Total Force
- (6) Manpower List - By Unit
- (7) Officer Seniority Listing
- (8) Expiration of Obligation/Enlistment
- (9) Expiration of Physical Examination
- (10) Address Listing

The RPMIS System is also used as a source document for the development of the Register of Reserve Officers (Comdt. Inst. M1427.2A) which is published bi-yearly and for the issuance of the Annual Statement of Federal Service and Retirement Points for each reservist (Figure 6).

B. COAST GUARD RESERVE MOBILIZATION SYSTEM

The Coast Guard mobilization mission requirements are developed by the Joint Chiefs of Staff and Navy requirements established in the Navy Capabilities Plan (NCP) and Naval Support and Mobilization Plan (NSMP), and from the expansion of the existing peacetime mission of the Coast Guard. These requirements are then translated into personnel requirements by the use of Coast Guard planning factors.

"These planning factors and the personnel requirements are reviewed by program managers prior to promulgation within the Coast Guard Logistics Support and Mobilization Plan (LSMP). The personnel requirements are

SOCIAL SECURITY NUMBER		PAY BASE DATE		BIRTH DATE		OPFAC			ANNIVERSARY DATE		REASON (See below)		SATISFACTORY FEDERAL SERVICE AND RETIREMENT POINTS FOR INCLUSIVE PERIOD												
		MO	DAY	YR	MO	DAY	YR		MO.	DAY			FROM	TO											
177425307		09	10	71	12	22	49	02	71102	09	10	1	09/10/76	10	09/09/77										
DRILLS APPROPRIATE DUTY AND E100		JAN	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	SATISFACTORY SERVICE THIS PERIOD	YRS	WKS	DAYS								
		00	00	00	00	00	00	00	00	00	00	00	00	000	TOTAL POINTS FOR DRILLS APPROPRIATE DUTY AND E100										
ACDUTRA AND ACDU		31	28	31	30	31	30	31	31	21	31	30	31	365	TOTAL POINTS FOR ACDUTRA AND ACDU										
														15	POINTS FOR MEMBERSHIP										
														CORRESPONDENCE COURSES COMPLETED THIS YEAR											
00579		12/09/77		0																000	POINTS FOR CORRESPONDENCE COURSES				
																				380	TOTAL POINTS	365	ADJUSTED TOTAL		
ACCUMULATED TOTALS																									
RETIREMENT POINTS						SATISFACTORY FEDERAL SERVICE FOR RETIREMENT																			
PRIOR POINTS	POINTS THIS PERIOD		TOTAL POINTS		YEARS	MONTHS	DAYS	PRIOR SERVICE	SERVICE THIS PERIOD		TOTAL SERVICE														
1243	365		1608		04	00	00	01	00	00	05	00	00												
DEPARTMENT OF TRANSPORTATION U.S. COAST GUARD (G-4175 (Rev. 2-73))		COAST GUARD RESERVE ANNUAL OR TERMINAL STATEMENT OF RETIREMENT POINTS PREVIOUS EDITIONS ARE OBSOLETE																							
<p>1. Our records show you have earned the retirement points indicated during the anniversary year shown. If you believe this statement to be incorrect detailed justification should be submitted within 90 days of receipt. Upon verification, a corrected statement will then be issued.</p> <p>2. This statement is furnished for the reason stated above.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">(1) Annual Statement</td> <td style="width: 50%;">(5) Corrected Annual Statement</td> </tr> <tr> <td>(2) Separation</td> <td>(6) Corrected Separation</td> </tr> <tr> <td>(3) Entered Active Duty</td> <td>(7) Corrected Entered Extended Active Duty</td> </tr> <tr> <td>(4) Transfer to ISL or Retired Reserve</td> <td>(8) Corrected Transfer to ISL or Retired Reserve</td> </tr> </table> <p>3. If Adjusted Total This Period is not 50 points, your anniversary year was unsatisfactory Federal Service for Retirement.</p> <p>4. No more than 60 points, exclusive of those earned by extended active duty or active duty for training, may be credited in a full anniversary year for computing retired pay. If period covered is less than a year, points credited will be for the proportionate part of the year, example: period of 9 months earned points creditable would be 45. The column "Adjusted Total" reflects this adjustment, if any.</p>																		(1) Annual Statement	(5) Corrected Annual Statement	(2) Separation	(6) Corrected Separation	(3) Entered Active Duty	(7) Corrected Entered Extended Active Duty	(4) Transfer to ISL or Retired Reserve	(8) Corrected Transfer to ISL or Retired Reserve
(1) Annual Statement	(5) Corrected Annual Statement																								
(2) Separation	(6) Corrected Separation																								
(3) Entered Active Duty	(7) Corrected Entered Extended Active Duty																								
(4) Transfer to ISL or Retired Reserve	(8) Corrected Transfer to ISL or Retired Reserve																								

FIGURE 6

published as part of the LSMP. The Reserve Mobilization Manpower Requirements (RMMR) are then developed to provide more specific details and guidance to the individual districts. The RMMR also provides information on the ... priority personnel mobilization requirements to be filled by members of the Selected Reserve." [21]

These requirements are further divided to both the unit and group levels and a Unit Table of Organization [21] (UTO) is developed for each Reserve Unit. This UTO assigns specific mobilization billets that are to be filled by members of the unit. Reference 21 contains specific instructions for the matching of unit members to assigned mobilization billets to ensure the best qualified reservist is assigned. These billet assignments are forwarded to the District, where they are reviewed and used to update the Master Mobilization File with corresponding billet and personnel matches. This data base file is then used to issue Advance Orders for Mobilization (CG-4911). The Advance Orders for Mobilization are:

"... pocket card orders prepared in advance and issued to all members of the Selected Reserve and Individual Ready Reserve (IRR) in order to provide for automatic reaction in the event of a declared mobilization." [21]

V. RESERVE TRAINING PROGRAM

A. BACKGROUND

1. General

The Coast Guard Reserve Training Program has changed sufficiently with the development of, and acceptance by the regular Coast Guard Commands, of the Reserve Augmentation

Program. The Reserve Personnel Management Information System (RPMIS) phase I has now been completed and is operational. This system has greatly reduced the task of storing, processing and retrieving the vast quantities of information necessary to manage the Reserve Program. It has been supplying information on reserve personnel matters, reserve retirement and points, Inactive Duty for Training (IDT) pay, and other related administrative information it was envisioned to supply.

Phase II, which was to expand the data base of the RPMIS System to incorporate the data necessary to manage the Reserve Training Program, has not been undertaken. This lack of development and concurrent lack of a common Coast Guard wide data base system that encompasses all aspects of the Reserve Program has greatly reduced the ability of management personnel to effectively monitor the quality and variety of information needed to manage the Reserve Program.

2. Reserve Training Function

The Coast Guard Reserve Training Program at all levels of command is a major program subdivision. It is charged by the Commandant of the Coast Guard to:

- "a. To increase overall Coast Guard readiness and mobilization capabilities;
- b. To expand capabilities for the Coast Guard to provide service and to accomplish jobs that could not otherwise be accomplished;
- c. To provide realistic support to the Coast Guard at a time when manpower supply problems and mission responsibilities are simultaneously increasing;

d. To improve morale and motivation of reservists through action that directly and proudly involves them in the humanitarian efforts of the Coast Guard;

e. To increase overall Coast Guard responsiveness to mission peakloads, emergencies, natural disasters and national emergencies." [4]

The Reserve Training Program managers must be able to monitor all facets of a reservist's training program to ensure that each reservist completes a balanced training program of formal and augmentation training to remain qualified for their assigned mobilization billet. This training is accomplished through the use of correspondence courses, Active Duty for Training (ADT) and Inactive Duty for Training (IDT), Active Duty schools at Coast Guard Reserve Training Centers or training centers of the other services and formal classroom training at Reserve Groups or Units.

3. Reserve Training System Users

As shown on Figure 2, the Reserve Program is divided into three levels of command:

- a. Headquarters
- b. District
- c. Group/Unit

These three levels have different information needs that must be provided for by the system. These responsibilities can be expressed in the planning model developed by Anthony [22].

This model is shown in Figure 7.

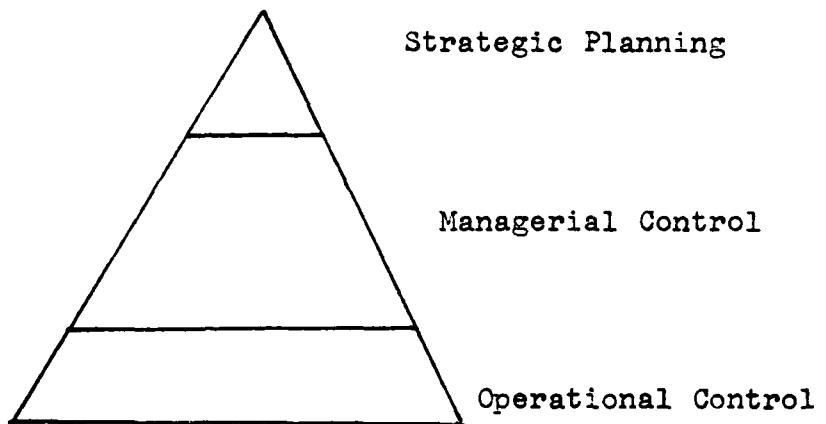


FIGURE 7 [22]

The three Reserve Command levels would be represented by this model in the following manner:

- a. Headquarters - Strategic Planning
- b. District - Managerial Control
- c. Group/Unit - Operational Control

The Headquarters level deals with the strategic long range planning factors that affect the total Reserve Program. They have a need for general aggregate data that identify long range trends and reserve needs. The Reserve District deals with areas involving the managerial control functions. They need some aggregate data, but also need specific information on individuals, not just on the total program areas, so they could monitor the performance of the third level, the Reserve Group/Unit. The Reserve Group/Unit level represents the operational control aspect of the Anthony model. At this level only specific individualized data is necessary so individual training requirements can be identified and met.

It will be the information needs of the two lower levels that will be considered as primary. If the information needs of these two levels are established and the system designed to provide these data for individuals, the information needs of the secondary user, Headquarters, will also be met as a by-product of the system. This will be possible since the data needed for strategic planning, controlling and forecasting of trends, within the Reserve Program at the Headquarters level, will be obtained through a summarization of individualized data within specific programs.

B. RESERVE PROGRAM ANALYSIS

1. General

The Coast Guard Reserve Program and the subprogram of Reserve Training are multidimensional programs. This analysis will overview the Reserve Training Program with the purpose of identifying those areas that have not been addressed by the present phase I Reserve Personnel Management System (RPMIS). This analysis will:

- a. Identify the major decision areas of the Reserve Training Program.
- b. Analyze the decision areas in which the managers must make their decisions [12].
- c. Analyze the existing computerized training systems.

For this analysis the Reserve Training Program has been divided into five major areas. These areas are:

- a. Active Duty for Training
- b. Mobilization/Domestic Emergency
- c. Servicewide Examination/Advancement
- d. Training Programs
- e. Inactive Duty for Training

2. Analysis of Decision Areas

a. Active Duty for Training

The use of Active Duty is one of the primary means for training reservists for their mobilization billet assignments. This major decision area is composed of many subprograms that have been developed to improve on the quality of training that the reservist is receiving and to ensure that future training requirements and needs will be met.

(1) Career Development Program. The major supporting program for Active Duty is the Coast Guard Career Development Program. This program (plan) has been developed to establish and identify specific individual and unit training needs and to plan to meet these needs [4]. This program which is prepared and maintained manually at either the Group or Unit level, requires the development of a Unit Long Range (five year) Training Plan. This plan is to include projected augmentation training needs, ADT school requirements and correspondence course participation. Input from this plan is used to identify any training needs that must be developed. This program is also used to develop future District school quota requirements [4].

(2) Active Duty School Program. Reserve Group,

Unit and District school quota requirements are developed from the Career Development Program. Reference 4 requires that each reservist attend an ADT rating or mobilization related school at least once every fourth ADT period. It is the responsibility of training personnel at all levels to monitor this performance to ensure reservists are receiving adequate training and that scheduled training resources do not go unused. For the purpose of training, reservists are then on a four year training cycle of 1 year school, 3 years OJT.

(3) Active Duty for Training Orders. Requests

for Active Duty for Training (Form CG-3453), Figure 8, are completed at the Reserve Group or Unit level based on the individual reservists Career Development Program and anticipated training needs. They are then forwarded to the District for formal approval. Before approval the information contained on the request must be verified, and past training, mobilization, and advancement requirements must be reviewed to determine if the requested ADT is appropriated and would provide useful and necessary training for the reservist. If approved, Active Duty for Training Orders (Form CG-4436) are issued for the requested duty. These orders are also used as a source document for payment of authorized ADT pay, travel, and allowance.

(4) Information Files. At the Reserve Group and

Unit levels of command the major source of training related information is the manually maintained Individual Training and

DEPARTMENT OF DEFENSE COAST GUARD OFFICER AND ENLISTED RESERVE PERSONNEL	REQUEST FOR ACTIVE DUTY FOR TRAINING OFFICER AND ENLISTED RESERVE PERSONNEL			DATE
<p>1. Request for Active Duty for Training Officer and Enlisted Reserve Personnel, dated _____, reporting date requested _____, _____ (Commandant (GRC) or Commandant (CGR))</p> <p>To: Commander, _____ Coast Guard District (e)</p> <p>From: Commanding Officer, _____ (Direct application is authorized for reservist in the ASP.)</p> <p>In accordance with prescribed training procedures, it is requested that _____ -day ACODUTRA orders be issued to the below-named reservist for _____ training at _____ with _____ with an alternate date of _____.</p> <p>(<input type="checkbox"/> with <input type="checkbox"/> without pay and allowances). The requested reporting date is _____ with an alternate date of _____.</p> <p>Training will apply to anniversary year ending _____.</p>				
NAME (Last, First, Middle Initial)		SERVICE NUMBER	SOCIAL SECURITY ACCOUNT NO.	GRADE/RATE
HOME ADDRESS		ZIP CODE	G/H EXEMPTION	PAY BASE DATE
EMPLOYED BY		POSITION	OFFICE PHONE (Include Area Code)	HOME PHONE (Include Area Code)
OFFICER DESIGNATION	PRES	TRAINING FOR	PO. RATE FOR WHICH TRAINING	DATE OF LAST ADVANCEMENT
CLASS "A" SCHOOL GRADUATE <input type="checkbox"/> YES <input type="checkbox"/> NO				
PREVIOUS TRAINING DUTY (List three periods starting with most recent)				
MONTH-YEAR	NO. DAYS	TYPE	LOCATION	
<p><input type="checkbox"/> Form C-23501C, "Record of Practical Exercises," is attached.</p> <p>TRANSPORTATION REQUEST: (Check one)</p> <p><input type="checkbox"/> AT OWN EXPENSE SUBJECT TO REIMBURSEMENT <input type="checkbox"/> BY TRANSPORTATION REQUEST <input type="checkbox"/> BY GOVT. CONVEYANCE <input type="checkbox"/> NOT APPLICABLE</p> <p>CERTIFICATION:</p> <p><input type="checkbox"/> I CERTIFY THAT I am not now receiving nor have I a claim pending for a pension, disability compensation or retired pay from the U. S. by virtue of prior military service.</p> <p><input type="checkbox"/> I CERTIFY THAT I HAVE ALREADY WAIVED pension, disability compensation or retired pay from the U. S. by virtue of prior military service for the period of training duty requested. My VA Claim Number is _____.</p> <p><input type="checkbox"/> I CERTIFY THAT there has been no material change in the condition of dependency since the date of my submission of Form C-24470, "Application for Basic Allowance for Quarters." I FURTHER CERTIFY that all documents paid me for support of my dependency since that date have been valid and correct to the best of my knowledge.</p> <p>Form C-24470, "Application for Basic Allowance for Quarters," is submitted.</p> <p>Penalty for presenting false claims or making false statement in connection with claims. Fines of not more than \$10,000 or imprisonment for not more than five years or both. Act 25 June 1964, 74 USC 287, 1964.</p>				
(Signature of trainee)				
FIRST ENDORSEMENT		Date _____		
From: Commander, _____ Coast Guard District (e)				
To: _____ (Commandant (GRC) or Commanding Officer of Unit of Applicant)				
(Check one and enclose)		<input type="checkbox"/> RETURNED APPROVED, ORDERS WILL BE ISSUED. <input type="checkbox"/> RETURNED DISAPPROVED. <input type="checkbox"/> FORWARDED APPROVED. <input type="checkbox"/> FORWARDED DISAPPROVED.		
		By direction _____		
SECOND ENDORSEMENT		Date _____		
From: Commander, _____ Coast Guard District (e)				
To: Commander, _____ Coast Guard District (e)				
(Check one)		<input type="checkbox"/> RETURNED APPROVED. <input type="checkbox"/> RETURNED DISAPPROVED.		
REPORT TO:				
By direction _____				

FIGURE 8

Progress Record (Form CG-4405), which in some cases has also been modified to record the required data for the Career Development Program, Figure 9.

The District also maintains a variety of manual information files. One of these card files is shown as Figure 10. These files are used as data source documents to complete or verify the data required in the approval process for the issuance of Active Duty for Training or other types of training orders.

b. Mobilization/Domestic Emergency

The Reserve Training Officer is responsible to insure that each reservist is trained and qualified to meet the requirements of their assigned mobilization billet. Information on the qualifications necessary for each mobilization billet and the specific billet each reservist is assigned to must be available at the District and Group/Unit levels of command. These data are necessary to ensure appropriated IDT and ADT training is scheduled in order that reservists become qualified in skills, or remain current in the skills they already have, that are required for their mobilization assignment.

Additionally, information must be maintained at both the District and Group/Unit levels in order that each reservist could be contacted in the event of a mobilization or domestic emergency call-up. Reference 23 requires that this

DEPARTMENT OF TRANSPORTATION U. S. COAST GUARD CG-411 (Rev. 6-67)			INDIVIDUAL TRAINING AND PROGRESS RECORD											
INSTRUCTIONS														
1. Prepare and maintain this form for all personnel assigned to the unit. 2. Upon transfer, insure that it is current and signed by the Training Officer. Forward this form and other pertinent records to the District Commander (z).														
NAME			SERVICE NO.		GRADE RATE		UNIT							
ARRIVED DATE		DATE ASSIGNED		DATE TRANS.		YEARS EDUCATION								
HBT SCORES				PRIOR MILITARY SERVICE										
EOT:		CLER:		BRANCH:										
MECH:		ARI:		DATE INCL:		LAST PAY GRADE:								
CIVILIAN EMPLOYMENT (List two. List only if held one year or more.)														
TITLE/POSITION			BRIEF JOB DESCRIPTION						DATES INCLUSIVE					
ADVANCEMENT RECORD (Action completed on date shown. Enter "NA" if not applicable.)														
DATE PRESENT PAY GRADE	DATE ELIGIBLE FOR NEXT PAY GRADE	DATE ELIGIBLE FOR SUE	COURSE COMPLETED FACTORY/CG-33030	PRAC. FACTORS PER	PERFORM- ANCE TEST	ACDUTRA AND OR CPO EVAL	RECON. FOR SUE CG-3331	NAME OF SUE	SUE DATE	RESULT OF SUE (PASS- FAIL)	RECOM. FOR ADVANCE- MENT	DATE ADVANCED		
CORRESPONDENCE COURSE(S) RECORD														
COURSE TITLE	DATE APPL.	DATE REC'D.	DATES LESSONS SUBMITTED								EOC	TEST RET.	DATE COMPL.	GRADE REC'D.
			1	2	3	4	5	6	7	8				
ACDUTRA PERFORMED														
A/Y	PRESENT GRADE/RATE	DATE THRU FOR OR OFF. DESIGNATOR	PHASE	TYPE	LOCATION		DATES		A/Y ENDING	REMARKS				
1														
2														
3														
4														
5														
6														
7														
8														
ALL ENTRIES VERIFIED FROM UNIT RECORDS. SIGNATURE OF TRAINING OFFICER (Name and grade)														
NAME				SERVICE NO.		GRADE RATE		ANNIVERSARY DATE						

FIGURE 9

GENERATION B
CCG09 (S-78)

CAREER DEVELOPMENT INTERVIEW FORM

Name _____	Rate _____	SSN _____
Date current anniversary year expires _____	Reserve category _____	
Model, assign. _____	Mobile task _____	
Augment, assign. _____	Augment task _____	
Years of education _____ Degrees or Majors _____	Employer _____	
Civilian occupation _____	Employer _____	
Job conflicts with ADT _____	Current enlistment expires _____	
Hobbies _____	Years of service _____ Intend to reenlist? Not a commitment? _____	
Enrolled in a correspondence course? _____ Want to? _____	Course _____	
Projected eligibility for SWE _____	Need practical factors? _____	
Additional training required for Advancement/Mobilization/Augmentation _____		
Special Qualifications: SAR Cassassin _____ Boot E-gilder _____ OOD _____ Boot Crewman _____ Radio Watchstander _____		

Special Qualifications: SAR Crewman _____ Boat Engineer _____ OOD _____ Boat Crewman _____ Radio Watchstander _____
Other _____

AOT/SAOT HISTORY

Do you want to participate in Operation Summer Stock? _____ How many days? _____ If I'm invited to attend ADT School, can you attend during the off season? _____

A/Y Ending	Type	Plan		Actual	
		Location	Date	Type	Location
1972					
1973					
1974					
1975					
1976					
1977					
1978					
1979					
1980					
1981					

TRAINING GOAL/NEEDS

GOAL(date)
REQUIREMENTS
(to achieve
goal include
projected
completion
date)

Reviewed Date	Reviewed By	Trainee	Reviewed Date	Reviewed By	Trainee

Remarks

FIGURE 9

FIGURE 10

call-up list be maintained and it contain sufficient information that all unit members could be contacted within 24 hours of a call-up. This unit call-up system is required to be current and tested at least every 12 months.

c. Servicewide Examination/Advancement

The Coast Guard Reserve servicewide examination program is not as critical a program as the ADT or Mobilization programs in relationship to the overall Coast Guard Reserve mission. However, it is a critical program in respect to the morale of the service. The advancement requirements for enlisted Coast Guard Reservists are listed in reference 2. These include specific requirements in the areas of:

1. Time in pay grade
2. Days of ADT or AD in pay grade
3. ADT and IDT evaluation requirements
4. Correspondence course requirements
5. Security Clearance
6. Marks
7. Service Requirements

Reservist training must therefore also be monitored closely at the Group/Unit and District levels of command to ensure that necessary requirements for enlisted advancement are met within the required time period. Also, most of the mobilization assignments are based on the reservist's rating and pay grade. If they complete the required correspondence courses, ADT training and receive the necessary evaluations on

ADT they will be better qualified to compete in the examination and also be better qualified and trained in general to perform their mobilization assignments. Additionally, if they are advanced they will receive additional pay for their efforts, thus increasing their morale and performance, and increase their likelihood of remaining in the service in a time of personnel shortages.

d. Training Programs

This fourth major area is a very broad area that covers many training and qualification programs that must be monitored to ensure the reservist within these categories complete the requirements within required time limits.

These programs include:

- a. Officer Experience Indicator Qualification Program
- b. Enlisted Qualification Code Qualification Program
- c. Lateral/Diagonal Changes in Enlisted Ratings
- d. Reserve Training Category Requirements
(see Appendix A)
 1. RX Program
 2. RQ Program
 3. RK Program
 4. RP Program
 5. RL Program
- e. Direct Commission Officer Requirements
- f. Satisfactory Performance of Drills and ADT
- g. Correspondence Course Program (Servicewide Examination/Advancement Requirements)
- h. Afloat Training (Advancement Requirements)

- i. ADT School Requirements
- j. IADT/SADT Programs
- k. Small Arms Training
- l. Officer Rotation Program
- m. Recruiting Program (to affect UTO Billets and Mobilization Requirements)

Specific requirements for these programs are contained in References 3 and 4. These programs all have varying requirements and the data base system that is developed for the Reserve Training Program must contain sufficient data to be useful in the monitoring of reservists' performance in meeting these requirements.

e. Inactive Duty for Training

The IDT Training Program is developed at the Group/Unit level and is based on the availability of augmentation opportunities at local regular Commands. Information on IDT billet assignments can be useful in both the ADT training and for servicewide examinations.

C. INDEPENDENTLY DEVELOPED RESERVE TRAINING DATA BASE SYSTEMS

There is no single Reserve Training related system in use to collect, store, and process information needed to make training related management decisions. The procedures that are now in use vary from no system to manual systems to computerized systems. Two of the computerized systems were developed by the Second and Thirteenth Districts.

1. Reserve Training Management Information System (RTMIS)

The RTMIS System [24] was a computer based data base system which was developed and instituted in the Second Coast Guard District, for the purpose of replacing the manual systems of data storage that were in use at that time. The primary objectives of the RTMIS System were to eliminate the need to record duplicated information, maintain a better utilization of available personnel resources, and to be able to better utilize the data within the system to manage the Reserve Training Program.

The design of this system took the form of four separate data files:

- a. Personnel Data
- b. Advancement History
- c. Correspondence Course History
- d. ADT History

The personnel data file contained information that was a direct duplication of RPMIS data and the RPMIS Personnel Action Sheets were used as a source document for this information. This file was created and maintained separately from the RPMIS file. The other three files contained data that was not contained in the RPMIS System.

The Advancement History file maintained a record of each reservist's advancement pattern from the time of entry to the present. It listed information on servicewide examinations taken and the results (passed/failed), and the advancement patterns and dates of advancement.

The Correspondence Course file maintained a history of all correspondence courses enrolled in, and the completion or disenrollment in each course with related dates.

The ADT file was a history by anniversary year of the duty, type, place and date of ADT or other AD performed by each reservist.

2. Thirteenth District Reserve Training System

This system, like the system developed in the Second Coast Guard District, had the basic objectives to eliminate the need to record duplicated information in manual files, maintain a better utilization of available personnel resources, and to be able to better monitor the performance of District reservists.

This system does, however, differ in several ways:

a. A computer program is used to transfer data directly from the RPMIS and Reserve Mobilization System to the Reserve Training System for common data files.

b. A file for District ADT school quotes is maintained with a report generated that lists the names of reservists that have been approved to attend the ADT school.

c. There is no correspondence course or advancement history information in the system.

VI. ANALYSIS OF INFORMATION REQUIREMENTS

A. GENERAL

The general Reserve Training Program functions and requirements have been discussed. These program requirements must now be analyzed to develop the specific data elements needed to perform the required planning and control functions. Tables 1 and 2 contain a listing of the data elements in the present Reserve Personnel Management Information System (Appendix C) and the Reserve Mobilization System that are necessary to perform the required monitoring and controlling functions of the Reserve Training Program. These elements, however useful, are not complete and must be supplemented with additional data in order to have the system represent a Management Decision Support System for all facets of the Reserve Program. The requirements of the missions and programs discussed in the previous chapters have been analyzed and a proposed data base developed that would integrate all the information needs of the Reserve Program Manager into an integrated data base. The proposed data base is a one file system, 2,160 characters in length, which uses the present RPMIS System as its base. The one file approach in lieu of multiple files was chosen to eliminate all duplication within the system, and for the ease of extending the system to an on line real time system. The proposed data base format is shown in Appendix D. Additional programs would have to also be developed to incorporate the data fields from the Reserve Mobilization System shown in Table 2 into the working data base of the RPMIS system.

TABLE 1

RESERVE PERSONNEL MANAGEMENT INFORMATION SYSTEM
TRAINING DATA ELEMENT ANALYSIS

Elements	Master Personnel File Officer and Enlisted	Name & Address File	Master Pay and Points Record
Social Security No. (Key)	X	X	X
Name and Initials	X		
Date of Birth	X		
Military Type Code	X		
Assigned OPFAC	X		
Home OPFAC	X		
Duty Status	X		
District	X		
Reserve Entry Date	X		
Expected Loss Date	X		
Reserve Category	X		
Reserve Class	X		
Reserve Training Category	X		
Reserve Pay Group	X		
Aviation Date	X		
Aviation Code	X		
Pay Base Date	X		
Present Grade Rate Date	X		
Present Alpha Grade	X		
Date of Permanent Grade	X		
Officer Designation Over 4 years Enlisted	X		
Dependence Status	X		
Anniversary Date	X		
Officer Experience Indicator	X		
Officer Experience Indicator Training for Command Pay Authorization	X		
Withholding Tax Code	X		
Civilian Occupation Code	X		
Years Education	X		
College Education	X		
Postgraduate Education	X		
Trade or Commercial Education	X		
Date Last NAC	X		
Date Last Physical	X		
Enlisted Qualification Code(s)	X		
Rating Training For	X		
Address		X	
City		X	
State		X	

TABLE 1

<u>Elements</u>	Master Personnel File Officer and Enlisted	Name & Address File	Master Pay and Points Record
Zip Code		X	
Country Code		X	
Satisfactory Federal Service for Retirement			X
Points Total by Month			X
Total Drill and ADT Points for Last Points Period			X

TABLE 2

RESERVE MOBILIZATION SYSTEM TRAINING DATA ELEMENT ANALYSIS

Elements

Social Security Number (Key)
Mobilization Unit
Phase Date
Detailed Code
Billet Number
Billet Rank/Rate Required
Experience Indicator Required
Assigned Date

B. ANALYSIS OF PROPOSED DATA REQUIREMENTS

1. Active Duty for Training

The present RPMIS System has several transaction codes listed in Appendix B that are concerned with the administrative aspects of ADT and the other types of reserve duty. These transaction codes do not transmit sufficient information. These codes, however, cannot be simply replaced, since they

do provide some necessary administrative information. The information requirements of these transaction codes have been analyzed and the following recommendations are made:

- a. Codes R 722 and R 723 should remain as they presently are.
- b. Codes R 724 and R 728 may be deleted from the system.
- c. A new transaction code for reserve duty should be established.

This code would contain the data fields shown in Figure 12 and could be submitted on the existing RPMIS forms when orders are issued.

Because of the current policies on ADT [4] which require at least 1 year's ADT out of every 4 years to be at an ADT School, the Career Development Program requirements, and because ADT is the primary mode of mobilization training, it is recommended that the necessary data fields be established to maintain ADT training historical (Figure 11), and projected Career Development data. Since the Career Development data will not be as specific or complete in nature as the historical data, different data requirements are needed. These requirements are shown in Figure 12.

The ideal system would be capable of storing ten years of reserve duty data. The file would contain a four year past history, a current working year, and the five year future projected ADT from the Career Development Program. If storage space is restricted it is recommended that the Career Development Program be restricted to 3, 2, or even 1 year in lieu of

RESERVE DUTY RECCRD FORMAT

<u>Elements</u>	<u>Characters</u>
01 Anniversary Year Duty Applied to	P(2) XX
02 Waiver of ADT Approved	P(1) X
03 Tono of Orders <i>(seven characters necessary HQ Tono)</i>	P(7) XXXXXXX
04 Date Report for Duty	P(6) XXXXXX
05 With/Without Pay and Allowances 1 = With 0 = Without	P(1) X
06 Number of Days Duty 1 = ADT - OJT 2 = COI - RTC Yorktown 3 = COI - RTC Alameda 4 = COI - Other 5 = SADT 6 = I/A 7 = IADT 8 = Fradutra	P(4) XXXX
08 Place of Duty (for other than school submit OPFAC (District/Unit) for COI use Reserve Training Manual School Abbreviations for specific school)	P(7) XXXXXXX
09 Remarks Codes 01 Warrant Officer Evaluation 02 E-7 Evaluation 03 E-8 Evaluation 04 E-9 Evaluation 05 Watch Officer	P(2) XX
10 Date Orders Terminate	(6) XXXXX

Record Length 37 Characters

FIGURE 11

CAREER DEVELOPMENT RECORD FORMAT

<u>Elements</u>	<u>Characters</u>
01 Anniversary Year Projected For	P(2) XX
02 Date of Projected Duty (YR-MO)	P(4) XXXX
03 Type of Duty	P(1) X
1 = ADT - OJT	
2 = COI - RTC Yorktown	
3 = COI - RTC Alameda	
4 = COI - Other	
5 = SADT	
6 = I/A	
7 = IADT	
8 = Fradutra	
04 Place of Duty	P(7) XXXXXXX
(for other than school submit OPFAC (District/Unit) for COI use Reserve Training Manual School Abbreviations for specific school)	
05 Remark Codes	P(2) XX
01 Warrant Officer Evaluation	
02 E-7 Evaluation	
03 E-8 Evaluation	
04 E-9 Evaluation	
05 Watch Officer	

Record Length 16 Characters

FIGURE 12

5 years. The reduction of the input from the Career Development Program would be the best alternative if storage space requirements dictate. The data provided by the Career Development Program is subject to numerous changes as reservists move between Units or Districts, or as they are or are not advanced as projected. If this data is added to the existing data base a separate transaction code must be established. This is necessary since specific dates and locations may not be available at the time the projections are made.

Provisions must also be made to accommodate more than 1 set of orders per anniversary year, and for easy recording of order cancellations or amendments. An analysis of the ADT performed by reservists in the 2nd, 9th and 13th districts indicates that if the 5 year cycle of historical data is used, 7 sets of orders would be the maximum issued during that period. Since the Career Development projected training is not as specific in nature, a limitation of 1 set of projected orders per year can be imposed without affecting the usefulness of the information provided.

If the proposed data for ADT and other Reserve Duty are added to the data base they would provide all the basic data needed for the ADT, SADT and IADT duty sections of the present Reserve Activities Report (Figure 13) [4]. Both the present and proposed data bases also contain information of IDT drill performance, and the type of mission being supported by the IDT. These data can be used to complete the IDT section of the

From:
To :

Subj : Reserve Activities Report (RCS G-RT-7016) for month of 19

1. The following Monthly Reserve Activities Report is submitted:

TRAINING MODES (Enter on FIRST applicable line)	TYPES OF RESERVE TRAINING				
	TDT (Rptd in Hrs)	ADT (Number in Days)	AT (unit use)	SADT (dist use)	IADT (lique)
FORMAL TRAINING					
UNIT ADMIN					
PRE - AUG TRNG					
AUGMENTATION -					
- Aviation					
- Cutters (65'+)					
- Pollution					
- Port Security					
- Search & Rescue					
- Aids to Nav					
- Marine Safety					
- Boating Safety					
- Reserve Staffs					
- R&D					
- Recruiting					
- Communications					
- Engineering					
- Training Cmds					
- Finance & Supply					
- Page 2 Totals					
AUG SUB-TOTALS					
GRAND TOTALS					

FIGURE 13

Subj : Reserve Activities Report (RCS G-RT-7016)

1. (Continued)

OTHER AUGMENTATION (Enter Activity/Unit Type)	TYPES OF RESERVE TRAINING			
	IDT (Rptd in Hrs)	ADT (Reported in Days) AT (unit use)	SADT (distuse)	LADT (HQ use)
PAGE 2 TOTALS				

(Enter Page 2 Totals on Page 1)

Signature

FIGURE 13

Reserve Activities Report using the standard 4 hours for a single and 8 hours for a multiple drill that is recorded. This approach, however, will not give an accurate account of the actual hours performed in some cases, especially when additional hours are performed. To capture this data, the Unit Attendance Record (CGHQ 4457) would have to be revised. This revision would take the form of an additional column in block 7 (see Figure 5) so it would be possible to show the hours performed for each mode of duty. This revision would take the form as shown in Figure 14.

Inactive Duty Training												Mode Hours					
Type	Date	Type	Date	Type	Date	Type	Date	Type	Date	Mode	Hours	Mode	Hours	Mode	Hours	Mode	Hours

FIGURE 14

A data field has been proposed in the expanded data base starting at character 134 of Appendix D to record this additional data.

2. Correspondence Course Participation

The present RPMIS System does maintain a file for correspondence course participation. This file transaction code R 741 [19] is used to record transactions for the purpose of recording retirement points earned through the completion of correspondence courses. This information, however, is not sufficient for the Reserve Training Program. In the present system correspondence courses are recorded upon completion.

Courses that are enrolled in, but not completed, are monitored by the Coast Guard Institute for Coast Guard Courses and, in most cases, not monitored at all for Navy Correspondence Course participation. It is recommended that the Coast Guard Institute correspondence course file be utilized as a source of data on Coast Guard correspondence courses participation for the proposed RPMIS expanded data base.

The Coast Guard Institute (CGI) data base has the data elements necessary to provide the data recommended in Figure 15.

	<u>Element</u>		<u>Data Length</u>
01	Course Number and Identification	P(15)	XXXXXXXXXXXXXXXXXX
02	Number of Points for Course	P(2)	XX
03	Type	P(2)	XX
	Coast Guard = CG		
	Navy = NA		
04	DATE Enrolled	P(6)	XX XX XX
05	DATE Disenrolled (if not completed)	P(6)	XX XX XX
06	DATE Completed	P(6)	XX XX XX
07	Grade	P(2)	XX

Record Length 39 Characters

FIGURE 15

If this type of direct retrieval is deemed impractical, then the data can be entered at the District level from the CGI printouts. Data on Navy correspondence course participation

would be entered at the District level as applications and completion letters are received. This file again, like the ADT file, would have to be capable of storing more than one correspondence course record. From a review of data in the 2nd and 13th Districts it is anticipated each reservist would require 6 correspondence course entries in their record at one time. This number would allow for the correspondence courses necessary for advancement [3], and for various training programs [3,4] to be maintained until no longer needed and still allows sufficient space for the recording of new active courses. The space requirements needed to store correspondence courses could be reduced by a selected review of the recorded correspondence courses and the purging of all courses over 2 years old (from completion data) that are not necessary for future advancement training requirements.

It is recommended that a separate transaction code be established to record the enrollment, disenrollment and completion of a correspondence course. These codes should reflect the information data element requirements shown in Figure 15. This approach will require an entry when the reservist enrolls in a course and a second entry for completion or disenrollment. If the element code for the completion date is encoded, the retirement points would be recorded in the reservist's retirement points data field.

Upon enrollment in a course the following data elements would be completed (Figure 15):

- 01 Course Number and Identification
- 02 Number of Points for Course
- 03 Type
- 04 Date Enrollment

Upon disenrollment from a course, the following data would be needed (Figure 15):

- 01 Course Number and Identification
- 05 Date Disenrolled

This would automatically delete the course from the reservist's record.

Upon completion of a course, the following data would be needed (Figure 15):

- 01 Course Number and Identification
- 05 Date Completed
- 07 Grade

This would automatically record the retirement points for the course in the appropriate data field.

3. Training Program Requirements

a. Lateral/Diagonal Rate Change

This is an important area for mobilization billet matching and for the development and completion of necessary training so a reservist may be considered qualified in their rating. The data base must include:

1. Present Rate
2. Rate Lateral/Diagonal to
3. Date request approved

The present data base contains only the first of these three fields. The additions of the approval date is necessary to monitor the reservist's progress toward completion of the requirements within the time limits established in Reference 3.

b. Direct Commission Officers

Data fields must be established to indicate those officers that are direct commissioned and have not completed their training requirement [3]. This must also include the date of direct commissioning so the requirements for completion within the authorized time period can be monitored. Other DCO requirements can be monitored through the correspondence course, ADT, and experience indicator data fields.

c. Mobilization Call-Up

The addition of home and business phone numbers, civilian employer, government drivers license indicator and domestic emergency volunteer code, and the data fields listed in Table 2 on mobilization would be useful in the event of mobilization or domestic emergency. Additionally, these data fields would eliminate the requirement of a unit maintained call-up list and, together with the ADT history data, greatly reduce the information necessary on a Request for Active Duty Orders (CG-3453).

d. Qualification Codes and Experience Indicators

Provisions have been made in the proposed data base to maintain additional qualification Codes and Experience Indicators. It is recommended that up to 5 qualification codes

and 3 additional Experience Indicator codes not including the presently held Experience Indicator be maintained. The qualification codes should use the codes presently used by the regular service with additional codes for specific reserve fields. This would be invaluable information for training, mobilization and officer rotation.

e. IDT Augmentation

A data element should also be included to indicate the type (mission area) of IDT augmentation that the reservist is performing. A code could be established using the mission areas of the Reserve Activities Report [4].

f. Medals and Awards

Data on medals and awards received by reservists are required to compute the advancement multiple for each reservist [25]. If the data field indicated in Appendix D is adopted, the data base would then contain all the data elements necessary to compute the complete advancement multiple for each reservist who is eligible for the servicewide examination. Appendix D contains a field for each medal and award that is authorized to be counted toward the advancement multiple. Once advanced, the appropriate fields would revert to zero in preparation for the next advancement step.

g. Enlisted Marks

This is a questionable area, however, because of the lack of data on enlisted marks for the completion of the servicewide examination, it is deemed that no problem could arise with the privacy of the

data, but this is outweighed by the usefulness of the data. Three years of marks are recommended, since this is the maximum number required for the application for a servicewide examination [25].

h. Reserve Categories Programs

The addition of the ADT, Correspondence Course and AFQT Score data, together with the data element indicated above, would also supply data necessary to monitor the training requirements of the various Reserve Training Programs (i.e., RK, RP, and RX).

i. Readiness Evaluation

The Coast Guard Readiness Evaluation Program is used to determine the state of readiness of Reserve Units and individual reservists in meeting their mobilization mission(s). The expansion to the RPMIS data base as proposed in Appendix D will greatly reduce the manpower necessary to effectively monitor the program and to ensure that Reserve Units are capable of meeting their mobilization requirements. It will also assist management personnel at all levels of the program in their responsibility to monitor individual progress toward meeting this objective.

C. IMPLEMENTATION

1. General

The proposed RPMIS data base expansion (Appendix D) is not a radical change from the existing data base system. The primary objective of this analysis has been to analyze the

Reserve Training information requirements and translate these requirements into an expanded data base system capable of meeting all the information needs of Reserve Program managers. Table 3 lists the new RPMIS data fields projected for the expanded data base system.

TABLE 3
SUMMARY OF PROPOSED NEW RPMIS DATA FIELDS

<u>Data Fields</u>	<u>Characters</u>
1. Date Last Background Investigation	P(4)
2. Prior Service	P(4)
3. ATQT Scores	P(10)
4. Date AFQT Taken	P(6)
5. Class "A" School Code	P(1)
6. Date Completed Class "A" School	P(4)
7. Previous Held Officer Experience Indicators (3)	P(6)
8. Enlisted Qualification Codes (extended)	P(10)
9. Rate Lateral/Diagonal to	P(4)
10. Date Lateral/Diagonal Approved	P(4)
11. Enlisted Marks (3 years)	P(36)
12. Employer Business Name	P(26)
13. Employee Position	P(10)
14. Business Phone	P(10)
15. Home Phone	P(10)
16. Domestic Emergency Volunteer Code	P(1)
17. Government Driver License Code	P(1)
18. IDT Augmentation Hours and Mission Areas (1 year)	P(240)
19. Award Points for Servicewide Examination	P(16)
20. Direct Commission Officer Code	P(1)
21. Date of Direct Commission	P(6)
22. Correspondence Course Record (6 courses)	P(39) each
23. Record of Reserve Duty Performed (7 sets)	P(37) each
24. Career Development Program Projections (5 sets)	P(16) each
25. IDT Billet Node Code	P(1)

The development of a single file data base to replace the present multiple file system has also been proposed. This recommended change has been made to eliminate all data

duplication, and for ease of adapting the single file system to a real time on line update process, which is envisioned as the next step in the RPMIS system development.

2. Paperwork Reduction

If the RPMIS System data base is expanded as recommended, most of the administrative record keeping would be removed from the Reserve Group/Unit level. These are the Coast Guard Reserve operational personnel. This reduction will allow additional manpower resources to be committed to the augmentation program. At the unit level, it would reduce the paperwork burden of the following programs or reports:

- a. Career Development Program (reduced)
- b. Reserve Activities Report (eliminated)
- c. Individual Training and Progress Record (eliminated)
- d. Request for Active Duty (Reduced information requirement)

Additionally, at the District level manhours would be saved by a reduction in:

- a. Reserve Activities Report (eliminated)
- b. SWE Requests verification and form completion
- c. Training Program requirement monitoring
- d. ADT request approval

3. Identification of Potential Problem Areas

There are several areas that have been identifiable as possible problem areas for the actual expansion of the RPMIS data base to that shown in Appendix D:

a. Information Verification

One of the major problems that the author has found with the existing RPMIS System is the problem with inaccurate data on some reservists within the data base. At most, if not all Districts, outputs from the RPMIS System are not sent to the operational Group/Unit level for verification and it is only when erroneous data are used that affect a reservist are recognized and corrected. This problem is partly because of the system input design with transaction forms prepared at the District and forwarded to Headquarters for key punching and system updating. With this system, the information is third, sometimes fourth, hand at the time of updating. It is recommended that the headquarters keypuncher resource be reallocated to the District level and the keypunching and system updating be delegated to the District level. This would reduce the likelihood of erroneous data being added to the system since the District would be working with fewer, more familiar people. This would also allow for more timely information since data that is rejected may be reviewed more easily, corrected, and resubmitted in a more timely manner.

It is also recommended that a procedure be instituted to verify the total record on a reservist at least annually. This can be accomplished as a separate report or as an addition to the present Satisfactory Federal Retirement and Point Statement, that is forwarded to each reservist annually on their anniversary date. The present form could be expanded to include the complete RPMIS file on each reservist. It could

be developed into a computer printed acceptable form similar to the present Coast Guard Advance Mobilization Orders. This form would be produced in two copies forwarded directly to the reservist using the information in the RPMIS address file. Instructions would indicate for the reservist to retain one copy and return the other (which would be franked and pre-addressed) to the District with necessary corrections, if any. Excess or outdated information for the History files (Correspondence Course and ADT) could also be purged from the system in a similar manner with a copy retained in the reservist's master record at Headquarters and a copy forwarded to the District for inclusion in the reservist's working service record.

b. Initial Source of Data Input

The information provided by the RPMIS, as any system, is only as good as the information in the system. The expansion of the data base which requires additional effort on the part of the District and Group/Unit personnel to provide the necessary information. It is important that proper instructions and briefs be prepared to educate the users to show them the possible benefits of the system to their specific operation. Provisions must also be made for additional personnel resources to be provided to the District (primary input level) to maintain and update the data base system.

c. Data Output

It is important that data outputs (reports) be developed as soon as possible and that provisions are made to see that this data is supplied to all appropriate levels in

a timely and usable manner. All possible efforts must also be made to eliminate reports and requirements that can be produced from the RPMIS System as soon as possible.

d. Acceptance of System

This is a possible problem area with any new or expanded MIS System, and is aggravated when the system does not function as designed. This problem can be eliminated through the proper education of user personnel and a slow progress of being the total system on line.

e. Data Base Integration

This is another possible problem area. The expansion of the present system will include data elements maintained in two other independent data bases, the CGI Correspondence Course and Reserve Mobilization data bases. The data required from these systems must be integrated in such a way as not to disrupt the use of these systems and also to provide as current as possible data to the RPMIS. This reliance on outside systems may affect the accuracy and timeliness of the data in the RPMIS System.

4. Reports

New information reports required to monitor the Training Program could be developed at Headquarters, similar to the present RPMIS System programs. Additionally, these report(s) could be forwarded monthly to the Group/Unit levels in the same manner as the Unit Attendance Record. This will provide up-to-date, timely information to all levels of the program which

could be used to support necessary management decisions.

The next step (RPMIS Phase III) would be the development of an on line real time system tying District and Group/Unit levels of command with the Coast Guard Institute and Headquarters data bases. System updating would still remain at the District level with the Group/Unit level only having read-out capabilities from a CRT terminal.

APPENDIX A

GLOSSARY OF TERMS AND ABBREVIATIONS

This appendix contains a glossary of common terms and abbreviations that have been used throughout this thesis.

1. Active Duty (AD) - Full-time duty in the active military service of the United States (10 USC 101).
2. Active Duty for Training (ADT) - A tour of active duty for Reserve Training under orders which provide for automatic reversion to non-active duty status when the specified period of active duty is completed.
3. Active Status - A status of service which includes all members of the Ready Reserve and members of the Standby Reserve, active status.
4. Active Status Pool (ASP) - A reinforcement pool composed of members in an active status who have completed their training obligation and are not assigned to a drilling unit. Includes certain members assigned either to the IRR or the Standby Reserve, active status.
5. Anniversary Year - For those who entered the Reserve before 30 June 1949, the anniversary year extends from 1 July to 30 June. For those entering after 30 June 1949, or whose Reserve service was broken after that date, the anniversary year extends from the date of entry or reentry to the day preceding the anniversary of entry or reentry.

6. Coast Guard Reserve Group (CGRESCP) - The senior organizational entity of the Selected Reserve which provides direction, support and coordination of activities performed by a number of CGRU's and acts as liaison among Reserve units, Regular operational commands, and the district.
7. Coast Guard Reserve Unit (CGRU) - An organizational entity of the Selected Reserve which provides training not of an active duty nature. Such units usually schedule approximately 48 drills annually with the additional requirement of two weeks AT for unit members.
8. Domestic Emergency - A serious natural or manmade disaster, accident or catastrophe.
9. Enlisted Qualification Code - A two digit alpha-numeric code identifying the special skills of an enlisted member, obtained by training and/or experience.
10. Enlistment Program
 - a) Non-prior Service
 1. RK - Ages 17 to 26. Non-prior service students with IADT split between two consecutive summers. The first summer (Phase I) consists of recruit training and the second summer (Phase II) consists of Class A School/OJT.
 2. RL (5x6) - Ages 17 to 26. A minimum of 30 weeks IADT consisting of recruit training, school and/or OJT.

3. RP - Ages 17 to 26. Approximately 30 weeks IADT consisting of recruit training. Class "A" School for which preselected and CJT.
- b) Prior Service
 1. RQ - Personnel with no statutory military obligation including Coast Guard Reserve personnel upon completion of their statutory military obligation and subsequent reenlistment.
 2. RJ (4x6) - Regular enlistees who serve four years on active duty in the Coast Guard and are transferred to the Reserve ASP for two years (the last one of which may be in the Standby Reserve, if requested); total service six years.
 3. RN (4-24x6) - OCS personnel who fail to successfully complete the prescribed course and reservists transferring from other Armed Forces to the Coast Guard Reserve for completion of their initially incurred statutory obligation.
- c) Non-prior Service Direct Petty Officer
 1. RX - Males ages 26 to 35 and females ages 20 to 35. Non-prior service direct petty officer enlistment program, for personnel with specialized civilian skills.
11. Experience Indicator (officer) - An eight digit numeric code identifying the specialties in which the officer has a skill, obtained by training and/or experience.

12. Formal Training - That training which provides exposure to elements of the individual's rating or mobilization assignment not usually obtained through on-the-job training.
13. Inactive Duty Training (IDT) - Authorized training performed by a reservist not on active duty or active duty for training. IDT consists of regular drills; periods of appropriate duty or equivalent training; or any special additional duties authorized for reservists by the Secretary concerned, and performed by them in connection with the prescribed activities of the organization to which they are assigned.
14. Individual Ready Reserve (IRR) - Members of the Ready Reserve not assigned to the Selected Reserve and not on active duty. The IRR consists of members assigned to the ASP, ARU, and those assigned to CGRU's, VTU's and ISTU's in non-paid drilling status.
15. Initial Active Duty for Training (IADT) - The initial active duty for training period of a non-prior service enlistee which is performed during a period of not less than 12 weeks and produces a trained member in a military specialty.
16. M Day - Effective date of general mobilization.
17. Mission Area - The broad scope of activities involved in a specific task or assignment. The mission areas in which the Coast Guard Reserve is involved are Port Security, Vessel Augmentation, Merchant Marine Safety, and staff support for aviation units, bases, district offices, training center, etc.

18. Mobilization - The act of ordering reservists to active duty in the event of a war or national emergency or when otherwise directed by the President.
19. Officer Programs
 - a) RG - (Direct Commission from 4-12x6 enlisted status) -- remainder of obligated service must be performed on IDT in a CGRU. Also refers to the now discontinued 6 x 8 program consisting of OCS followed by six months ADT; seven and one-half years IDT in a CGRU -- total commissioned service 8 years.
 - b) RI (3x6) - Officer Candidate School followed by three years AD; remainder of six years obligation in Ready Reserve. Members may elect to drill with a CGRU.
 - c) RQ - Officer personnel with no statutory military obligation.
20. On-the-Job Training (OJT) - Training at a Regular Coast Guard unit involving actual performance of tasks under close supervision.
21. Pay Base Date (PBD) - A constructive date that provides a base point from which service for pay purposes may be readily computed.
22. Ready Reserve - Consists of personnel assigned to the Selected Reserve and Individual Ready Reserve who are liable for active duty either in time of war, in time of national emergency declared or when otherwise authorized by law.

23. Reserve - Of or pertaining to an enlistment, appointment, grade or office in a Reserve (as opposed to Regular) component of an Armed Force.
24. Reserve Categories - The Reserve is composed of three categories; the Ready Reserve, the Standby Reserve and the Retired Reserve.
25. Reserve Classification - A two part alpha code, the first part of which indicates the Reserve Category such as "R" for Ready, "S" for Standby and "Reg." for Retired. The second part indicates the Reserve class, i.e., status with regard to statutory military obligation and the enlistment/reenlistment program in which the member is currently serving.
26. Retirement Point - A numerical unit used to credit an individual for active duty and membership and participation in Reserve training for use in determining retirement benefits.
27. Satisfactory Federal Service - A year of satisfactory Federal service is any anniversary year during which a reservist earned a minimum of 50 retirement points. The accumulation of 20 such years is required for retirement eligibility.
28. Selected Reserve - That portion of the Ready Reserve consisting of units and, as designated by the Secretary concerned, of individual reservists with highest priority for mobilization who participate in inactive duty training periods and annual training in a pay status. Also includes persons performing initial active duty for training.

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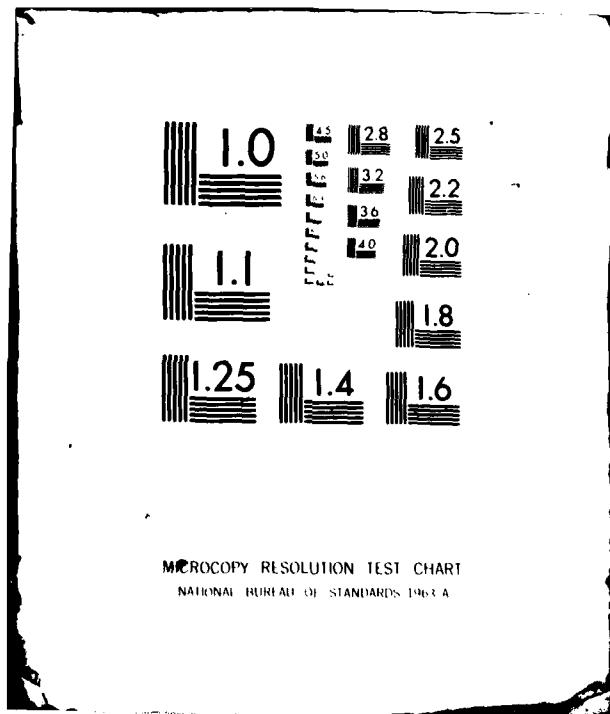
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29. Special Active Duty for Training (SADT) - ADT which is performed in addition to, in combination with, or in place of AT. SADT in place of AT is performed under the same restrictions as AT.
30. Standby Reserve - A category of the Reserve composed of members other than the Ready Reserve and Retired Reserve, who are liable for active duty only in time of war, or national emergency declared by Congress, or when otherwise authorized by law.
31. Statutory obligation - A military obligation prescribed by law and which is incurred upon initial entry into a Regular or Reserve component of one of the Armed Forces.
32. Training/Pay Category - A single letter alpha code indicating the training and pay category to which a reservist has been assigned.
33. Wartime Mission Training - Any training which prepares individuals for war-time duties they will be required to perform other than the routine duties associated with rank, rate, or rating.

LIST OF ABBREVIATIONS

1. AD	Active Duty
2. ADT	Active Duty for Training
3. ADMINMAN	Administrative Manual for Coast Guard Reserve (CG-296)
4. ADP	Automatic data processing
5. AFRA	The Armed Forces Reserve Act
6. AQT	Applicant qualification test
7. ASP	Active status pool
8. AT	Annual active duty for training
9. CFR	Code of Federal Regulations
10. CGO	Coast Guard Orientation
11. CGRESGP	Coast Guard Reserve Group
12. CGRU	Coast Guard Reserve Unit
13. COMRESGP	Commander, Reserve Group
14. CPO	Chief Petty Officer
15. DOD	Department of Defense
16. DOT	Department of Transportation
17. IADT	Initial Active Duty for Training
18. ID	Inactive Duty
19. IDT	Inactive duty training
20. IRR	Individual Ready Reserve
21. ISL	Inactive Status List
22. M-DAY	Effective Date of General Mobilization
23. MOBFAC	Mobilization Facility
24. MOBSITE	Mobilization site

25.	MOBSTA	Mobilization Station
26.	NAC	National Agency Check
27.	OCS	Officer Candidate School
28.	OJT	On-the-job training
29.	OQT	Officer qualification test
30.	PBD	Pay Base Date
31.	PERSMAN	Personnel Manual (CG-207)
32.	RFA	The Reserve Forces Act of 1955
33.	REBI	Reserve Enlisted Basic Indoctrination
34.	RESGP	Reserve Group
35.	ROBI	Reserve Officer Basic Indoctrination
36.	RPMIS	Reserve Personnel Management Information System
37.	SADT	Special Active Duty for Training
38.	SGLI	Servicemen's Group Life Insurance
39.	TRA/PAYCAT	Training/Pay Category
40.	UCMJ	Uniform Code of Military Justice
41.	UMT&S	The Universal Military Training and Service Act
42.	USC	U. S. Code
43.	VA	Veterans Administration

APPENDIX B

INDEX OF RPMIS TRANSACTION CODES

This appendix contains a list of RPMIS data transmittal transaction codes and a description of the purpose of each code.

<u>ACTION CODE</u>	<u>ACTION DESCRIPTION</u>
R 047	Name Change or Submittal
100	Original Enlistment CGR
101	Reenlistment in CGR After Break in Service
102	Assignment to CGR or Regular Enlisted Member Released from Regular CG to Fulfill Military Obligation
103	Reporting of Enlisted Reservist Upon Release From Extended Active Duty
104	Appointed Officer from Any Status Other Than Enlisted CGR
105	Reporting Reserve Officer Returned from Extended Active Duty
106	Resumption of Enlisted Status Upon Resignation of Appointment as Cadet (USN, USA, USAF, USCG)
R 200	Honorable Discharge - Expiration of Enlistment
R 200	Honorable Discharge - Expiration of Enlistment and Reenlistment with No Break in Service
R 201	Honorable Discharge - Convenience of the Government
R 201	Honorable Discharge - Convenience of the Government and Reenlistment with No Break in Service
R 202	Honorable Discharge - Dependency
R 203	Honorable Discharge - Minority

<u>ACTION CODE</u>	<u>ACTION DESCRIPTION</u>
R 204	Honorable Discharge - Disability Not incident to Service
R 205	Honorable Discharge - Disability Incident to Service
R 206	Honorable Discharge - Officer Honorably Discharged at Direction of Secretary of Transportation
R 207	Honorable Discharge - Unsuitability
R 208	Honorable Discharge - Expiration of Obligation
R 208	Honorable Discharge - Expiration of Obligation and Reenlistment with No Break in Service
R 210	General Discharge - Expiration of Enlistment
R 211	General Discharge - Convenience of Government
R 212	General Discharge - Dependency
R 213	General Discharge - Minority
R 214	General Discharge - Disability Not Incident to Service
R 215	General Discharge - Disability Incident to Service
R 216	General Discharge - Expiration of Obligation
R 217	General Discharge - Unsuitability, Unfitness, or Misconduct
R 218	General Discharge - Disability Due to Own Misconduct
R 219	General Discharge - Officer by Direction of The Secretary of Transportation
R 224	Undesirable Discharge - Unfit for Duty
R 230	Bad Conduct Discharge - Sentence by Special Courts Martial
R 231	Bad Conduct Discharge - Sentence by General Courts Martial
R 240	Dishonorable Discharge - Sentence by General Courts Martial

<u>ACTION CODE</u>	<u>ACTION DESCRIPTION</u>
R 250	Reporting Death of CGR Personnel
R 251	Cancellation of Enlistment
R 252	Honorable Discharge Convence of Gov't from Enlisted Status CGR. Appointed Officer in CGR.
R 253	Transfer to Extended Active Duty
R 254	Honorary Retirement - Not Entitled to Pay
R 255	Retired with Pay
R 256	Appointment as Cadet in Service Academy
R 258	Officer Discharged - Other than General or Honorable by Direction of the Secretary of Transportation
R 259	Officer Reverted to Enlisted
R 260	Dropped from Rolls (Title 33 CFR 8.6208)
R 261	Placed on Temporary Retired List Due to Physical Disability
R 262	Placed on Permanent Retired List Due to Physical Disability
R 402	Reporting from Unit in Another District
R 501	Stop SGLI Coverage
R 502	Reduce SGLI Coverage
R 503	Start SGLI Coverage
R 504	Stop SGLI Coverage on ACDU/ACDUTRA for 31 Days or More
R 505	Start SGLI Coverage upon Completion of ACDU/ACDUTRA for 31 days or More
R 600	Transfer to Unit in Another District
R 700	Advancement in Enlisted Rate Promotion CWO/WO to Temporary Grade
R 701	Reduction in Enlisted Rate Reduction in Officer Temporary Grade

<u>ACTION CODE</u>	<u>ACTION DESCRIPTION</u>
R 702	Lateral Change in Enlisted Rate
R 703	Promotion or Change in Permanent Officer Grade
R 704	Pay and Allowances Accrual Date
R 705	Assignment of Designator
R 706	Removal of Designator
R 707	Provisional Rate Made Permanent
R 708	Assignment of Qualification Codes
R 709	Removal of Qualification Codes
R 710	Change of Reserve Category and Class
R 711	Training/Pay Category Update
R 722	Transfer to Initial Active Duty for Training
R 723	Reporting from Initial Active Duty for Training
R 724	Reporting Non-Pay Active Duty Training Completed
R 728	Waiver of Annual Active Duty for Training Requirement for Current Anniversary Year
R 729	Transfer to Unit Within Current District
R 736	Federal Withholding Tax Exemptions
R 741	Reporting Correspondence Course Completion for Points
R 744	Group Designation
R 754	Supplemental Clothing Monetary Allowance (SUP CMA)
R 760	Establish Pay Base Date Including Prior Service
R 767	Establish PBD Upon Original Enlistment or Appointment
R 768	Pay Base Date Change and Certification
R 769	Pay Base Date Certified
R 770	Commissioned Officers Credited with Over Four Years Enlisted Active Service

<u>ACTION CODE</u>	<u>ACTION DESCRIPTION</u>
R 773	Entitled Command Pay
R 774	Terminate Command Pay
R 775	Entitlement to Aviation Pay for Duty Involving Flying for Crew Member. Issued Permanent Flight Orders as Authorized by Commandant
R 776	Termination of Permanent or Temporary Aviation Pay
R 777	Entitlement to Aviation Pay for Duty Involving Flying for Crew Member. Issued Temporary Flight Orders by Competent Authority
R 778	Entitlement to Aviation Pay for Duty Involving Non-crew Member, (Technical Observer). Issued Permanent Flight Orders as Authorized by Commandant
R 788	Training Rating Removed
R 789	Training Rating Added
R 791	Extension of Enlistment
R 795	Certification Selective Service - Priority Induction
R 796	Certification Selective Service - Regular Induction
R 900	General Update and Change Transaction

APPENDIX C

BREAKDOWN OF THE RESERVE PERSONNEL
MANAGEMENT INFORMATION SYSTEM RECORDS

The RPMIS record is 850 characters long. The coding for these data fields are listed in CG-296-1, Reference 4. There are 5 main files:

1. Name and Address File
2. Reserve Personnel Master Record Officer
3. Reserve Personnel Master Record Enlisted
4. Correspondence Course Record
5. Master Pay and Points Record

This appendix identifies in detail the 850 characters of the RPMIS System.

Personnel Number	Name		Date of Birth	Assigned Circumstances	Home Of Rec	Date of Discharge	P. rank Date					
	First Name	Last Name										
Master Record Officer	E	YK	MO	DA	C	0	1	2	3	4	5	6
Res. 1-30	1	1	1	1	1	1	1	1	1	1	1	1
Res. 5-160	1	1	1	1	1	1	1	1	1	1	1	1
Res. 15-245	1	1	1	1	1	1	1	1	1	1	1	1

FIGURE 16

FIGURE 18

FIGURE 19

FIGURE 20

FIGURE 20

APPENDIX D PROPOSED RPMIS DATA BASE EXPANSION

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FIGURE 21

FIGURE 21

Day by Day Duty		Day by Day Duty		Point Totals by Month		Point Totals for New Anniversary Month		Total Points for Current Anniversary Month		Total Points for New Anniversary Month		Total Points for the Period	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28
29	30	31	32	33	34	35	36	37	38	39	40	41	42
43	44	45	46	47	48	49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80	81	82	83	84
85	86	87	88	89	90	91	92	93	94	95	96	97	98
99	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126
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169	170	171	172	173	174	175	176	177	178	179	180	181	182
183	184	185	186	187	188	189	190	191	192	193	194	195	196
197	198	199	200	201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220	221	222	223	224
225	226	227	228	229	230	231	232	233	234	235	236	237	238
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617	618	619	620	621	622	623	624	625	626	627	628	629	630
631	632	633	634	635	636	637	638	639	640	641	642	643	644
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729	730	731	732	733	734	735	736	737	738	739	740	741	742
743	744	745	746	747	748	749	750	751	752	753	754	755	756
757	758	759	760	761	762	763	764	765	766	767	768	769	770
771	772	773	774	775	776	777	778	779	780	781	782	783	784
785	786	787	788	789	790	791	792	793	794	795	796	797	798
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813	814	815	816	817	818	819	820	821	822	823	824	825	826
827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854
855	856	857	858	859	860	861	862	863	864	865	866	867	868
869	870	871	872	873	874	875	876	877	878	879	880	881	882
883	884	885	886	887	888	889	890	891	892	893	894	895	896
897	898	899	900	901	902	903	904	905	906	907	908	909	910
911	912	913	914	915	916	917	918	919	920	921	922	923	924
925	926	927	928	929	930	931	932	933	934	935	936	937	938
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967	968	969	970	971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990	991	992	993	994
995	996	997	998	999	999	999	999	999	999	999	999	999	999

FIGURE 21

FIGURE 21

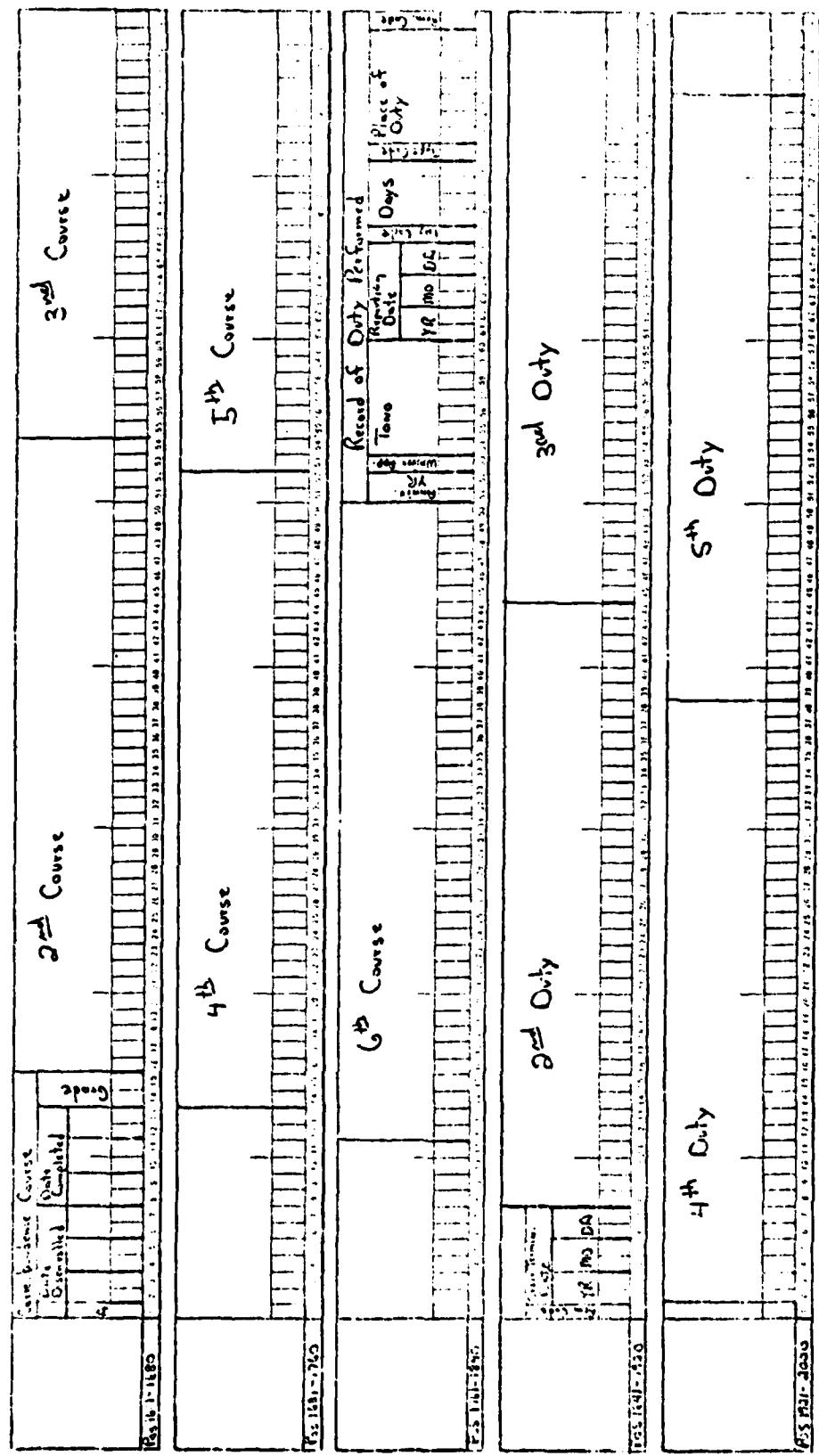


FIGURE 21

FIGURE 21

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